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A study into the transmission of Greek thought to early Arab civilization through Syriac and Arabic in the light of modern research

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A STUDY INTO THE TRANSMISSION OF GREEK THOUGHT TO EARLY ARAB CIVILIZATION THROUGH SYRIAC AND ARABIC IN THE LIGHT OF MODERN RESEARCH

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CHAPTER I

INTRODUCTION

I. THE STATEMENT OF THE THESIS

Since the accelerated growth of Arab studies beginning in the latter part of the last century, historians of Arab and Islamic civilizations have been growing ever more conscious of the role played by the Syriac and Arabic languages in transmitting Hellenic thought to the early Muslims of Middle Eastern origin between the first and third centuries after the hegira, or the seventh and tenth centuries after Christ.

The first scholars to tackle the subject of the transmission were of European origin, among whom the first outstanding figure to achieve notability was Moritz Steinschneider, who prepared Die Arabischen Übersetzungen aus dem Griechischen in the 1890's.

Other European members of the academic profession who studied the transmission of Greek thought through Syriac and Arabic were Dr. Max Meyerhof, Giuseppe and Francesco Gabrieli, and Lucien Leclerc. Not until 1962 was a first comprehensive work in English published of the transmission; specifically, the book's research dealt with philosophical translations from the Greek. Its author was Richard Walzer

of Oxford, whose work was entitled Greek into Arabic. De Lacy O'Leary published in the 1950's two works on the passage of Greek thought to the Arabs, but neither work contained significant references, evident in either footnotes or bibliographies.

A study, therefore, is needed to organize the components of the subject: the means of the transmission (Syriac and Arabic); the body of knowledge transmitted; the scholars responsible for the transmission; the elements in Arab/Islamic culture which encouraged the transmission; the effects of the translations upon contemporary and later groups of scholars; and lastly, an investigation into modern works on the subject, besides recommendations for further development in analyzing the transmission.

Upon studying the subject, the writer of the thesis realized the need for cooperation between other branches of history and the humanities in order to make an investigation into the field. Scholars in the fields of Arab civilization, classics, medieval studies, and oriental culture are needed to consult one another in the locating, collecting, translating, and analyzing of medieval source materials concerned with the transmission.

This thesis attempts to study the transmission of Greek thought to early Arab civilization through Syriac and Arabic, using source materials based upon research completed

since the eighteenth century.

The agent responsible for the transmission, manifested in Syriac and Arabic translations, was a group of non-Muslim translators, mostly Syriac in tongue and script, the majority of whom were Nestorians.[1] Among the first followers of Nestorius were translators of versatile linguistic and academic scholarship. It is of the writer's opinion that the modern Nestorians in the Middle East are not of the same scholastic level as that of their predecessors.

The Nestorians of pre-Islamic times, instead of using Greek directly to transmit Hellenic thought to their contemporaries, transferred the Greek texts to Syriac, since Nestorian relations with the Byzantine Church were not cordial, and, in fact, were severely warped.[2]

In general, scholars of Arab history have said that the impact of Greek thought upon the Arabs, manifest in Syriac and Arabic translations might be said "with the minimum of exaggeration.../to be/ comparable with... the

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[1] John Joseph, The Nestorians and Their Muslim Neighbors: A Study of Western Influence on Their Relations (Princeton Oriental Studies, No. 20. Princeton, New Jersey: Princeton University Press, 1961), entire book.

[2] De Lacy O'Leary, Arabic Thought and Its Place in History (Trubner's Oriental Series. London: Routledge & Kegan Paul, Ltd., 1954), p. 33.

Renaissance itself."[3] Colleagues of Dr. Lyons, an English Arabist at Cambridge University, have also expressed the statement that modern research into the factors of the translators and their translations still have a long way to go before a clear picture of the elements involved in the cultural environment of the Umayyad and Abbasid caliphates can be constructed.[4]

II. THE PURPOSE OF THE STUDY

The purpose of the study, based mainly on modern research, is to investigate the elements composing the transmission of Hellenic knowledge to the Umayyad and Abbasid caliphates through Syriac and Arabic.

The emphasis of the study is placed upon the period of the mid-800's when the potently intellectual and cultural achievements of the most famous Abbasid capital, Baghdad, reached an unprecedented level of activity. One scholarly accomplishment built under the patronage of the Caliph al-Ma'mun was the Bayt al-Hikmat (House of Knowledge) where

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[3]Malcolm C. Lyons, "The Relations Between Greek and Arabic Philosophy and Science," Scientia: Revista di scienza, IC (1964), p. 68.

[4]Arthur J. Arberry, "An Early Arabic Translation from the Greek," Bulletin of the University of Egypt, Faculty of Arts, I (1933), p. 48; Richard Walzer, "Islamic Philosophy," Greek into Arabic: Essays on Islamic Philosophy (Oriental Studies I. Cambridge, Massachusetts: Harvard University Press, 1962), p. 6.

Syriac and Arabic translations from Greek texts were encouraged. The record of greatest output of accurate translations at the Bayt al-Hikmat was held by Hunayn ibn Ishaq and his school which flourished during the reign of al-Mutawakkil. Both earlier and later translating bodies will be discussed, but the concentration of the thesis lies upon Hunayn ibn Ishaq and his school of Baghdadi translators.

III. THE ORGANIZATION OF THE STUDY

Since the study's purpose is to investigate the Greek transmission to the early Arabs through Syriac and Arabic from sources of modern research, the following questions will be answered: What were the media of the transmission (Chapter II)? What Greek knowledge was transferred to the Arabs (Chapter III)? Who performed the transmission (Chapter IV)? How and why did the transmission take place (Chapter V)? What was the effect of the transmission (Chapter VI)? And, what research in modern times has been done about the transmission (Appendix I)? A summary of the answers to the aforementioned questions is included in the conclusion (Chapter VII). An annotated list of references consulted is included at the end of the thesis as well as a list of selected references. The second list contains only items which either are not referred to in the body of the thesis and appendix, but relate to it in some manner, or were

included, but because of the nature of the material itself, were not annotated, such as personal correspondence.

IV. THE LIMITATION OF THE STUDY

The study is limited to concentrating upon one translation group which acted as an agent in the transmission of Hellenic knowledge to early Arab civilization. The writer regrets only that this limitation has to occur. A complete study of translating groups during Abbasid rule would have included Hebraic scholars, whose contribution to the transmission of Greek thought played a significant role in cultural progress during medieval times in the Middle East. The writings of Professors Moritz Steinschneider and Franz Rosenthal, among others, should be consulted for studies of the Jewish translators. Other groups prepared secular translations from the Greek, such as Zoroastrians and Hindus who obtained Greek ms. copies. The importance of these two latter groups in connection with translating efforts cannot compare with the achievements of the Syriac scholars of Christian and Sabean backgrounds who put the words of Plato, Aristotle, Galen, and Euclid, to name only a few, into the Semitic tongues of Syriac and Arabic. Jewish translators, too, could be put into the same class with the Christian and Sabean scholars. However, in choosing a workable thesis subject, the writer limits the study to a concentration upon

Nestorian Christian translators and some of their Sabean and other Christian contemporaries.

Brief mention is given to Moorish scholars in Toledo and Cordoba, besides translators in southern Italy and Sicily, who rendered Arabic into Latin. Such brief reference to these important translating groups is made because of two reasons; the lack of the writer's knowledge of Latin and the limitation of the thesis. Reference made to the Moorish and Italian scholars is to show the effect of the Syriac/Arabic translations upon later groups of intellectuals. Also, no comparative study is made of textual criticism of extant mss., since the writer of the thesis is not linguistically qualified to make such an analysis. Available mss. which are difficult to obtain are often only in one language. Another disadvantage in working with extant copies is that proof of authority of mss. is often difficult.

V. THE LIMITATION OF THE SOURCES OF DATA

The writer of the thesis was also limited in only being able to work with sources coinciding with the writer's linguistic background. The materials, therefore, included were in English, German, Italian, French, and Spanish. Some Arabic material was consulted, but only used when accompanied by an equivalent translation in an European language. No reference will be given here to descriptions of sources of

data, since reference is made to them specifically in the following chapters and appendix.

VI. THE COLLECTION OF DATA

The method employed in collecting the data for the thesis was first to consult the bibliographies listed in Index Islamicus, 1906-1955 and its Supplement, 1956-1960, the old edition of The Encyclopaedia of Islam (published 1913-1936), the newer edition of the same encyclopedia, currently being issued in fascicle form, The Accumulated List of Works Represented by Library of Congress Printed Cards, Books: Subject, and through correspondence with subject specialists who suggested recently published books and periodical articles in the field. At the time of the first collection of material, note cards were prepared for the compilation of the "Annotated List of References Consulted." Upon acquisition of the material, references were also taken for further research from consulting footnotes, bibliographies, and festschriften containing bibliographies of subject's writings. In the use of some footnotes, secondary sources were cited when the writer was unable to get the primary source citation.

VII. TRANSLITERATION

The form used for the transliteration of Arabic words and proper names was taken from the U. S. Dept. of State's

Transliteration Guide for Arabic, Bulgarian, Chinese... (Washington, D. C., 1961) and the Cataloging Rules of the American Library Association and the Library of Congress, Additions and Changes, 1949-1958 (Washington, D. C.: Library of Congress, 1959), p. 38, both of which contain the same rules. Exception is made to the use of the ta marbuta, ö, the feminine ending "t" in Arabic, which is rendered "at" in this thesis, the two transliteration sources rendering it "ah." For example, the Bayt al-Hikmat is spelled in this manner rather than Bayt al-Hikmah. No diacritical marks are given for Semitic words and proper names, except in bibliographic items in the footnotes and the "Annotated List of References Consulted." In rendering Syriac transliterations, the writer follows the spellings found in Anton Baumstark's Geschichte der syrischen Literatur, William Hatch's An Album of Dated Syriac Manuscripts, and William Wright's A Short History of Syriac Literature. If the word or name does not come from any of the three writers on Syriac literature, the spelling then is determined from the western source footnoted. Spelling of classical Greek works is taken from common usage.

VIII. CHRONOLOGY, WORD DEFINITION, AND SPELLING

Unless otherwise specified, all dates in the thesis refer to anno Domini. A. H. preceding a date means "after the hegira" or the flight from Mecca to Medina in the year

A. D. 622 by the Prophet Muhammad and his followers. The first year of the Islamic calendar based upon the lunar year begins the year A.H. 1 (A.D. 622). The Islamic year differs in length from the year of the Gregorian calendar.

In defining the words "Arabist, classicist, orientalist," and "medievalist," the following definitions are used. An Arabist is a person specialized in Arab studies, which includes knowledge of Islamic civilization.[5] Using Webster's definition, a classicist is "one learned in the Classics."[6] An orientalist is a person with knowledge of the history, languages, literature, etc. of the Orient, which is composed of three Asian civilizations; "Mohammedan [i.e., Islamic], Indian, and Chinese-Japanese."[7] The term medievalist refers to a person devoted "to the institutions, arts, and practices of the Middle Ages."[8] Hellenism is used in the thesis to mean the "Greek character or civilization; esp., the culture represented by the ideals of the classical

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[5] This is the writer's own definition, based upon common usage among students of Middle Eastern studies.

[6] Webster's New Collegiate Dictionary, Based on Webster's New International Dictionary, Second Edition (Springfield, Massachusetts: G. & C. Merriam Co., Publishers, 1951), p. 152.

[7] Ibid., p. 592.

[8] Ibid., p. 522.

Greeks."[9] In abbreviation of spelling, ms. refers to manuscript and mss. to manuscripts. In spelling place names in the Middle East common to ancient and early Christian history, the form most popular to western historians is employed, e.g., Antioch, Nisibis, Harran, Edessa, and Junde-Sapor.[10]

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[9] Ibid., p. 383.

[10] The spelling of Junde-Sapor, a town in the Sassanian Empire, had many variant spellings, Ar. Jundaysabur, Jundi-Shapur, etc. Vide Arab and Persian histories, encyclopedias for other spellings.

CHAPTER II

BRIEF LINGUISTIC AND HISTORICAL ANALYSES OF SYRIAC AND ARABIC

Syriac and Arabic are the two main languages with which this study is concerned in laying a partial foundation for an analysis of the transmission of Greek thought to early Arab civilization. Other languages, such as Persian and Hindi, also played a partial role in the transmission, but the majority of works translated from the Greek were in Syriac and Arabic. This chapter will discuss the positions of Syriac and Arabic in the Semitic family of languages from the historical development of the two languages through the major translating period (A.D. 950), and from a brief linguistic approach.

I. PLACE OF SYRIAC IN THE SEMITIC FAMILY OF LANGUAGES

The term Semitic was first used in the eighteenth century by A. L. Schlözer who derived the term from the Old Testament reference to Shem, whose descendants spoke a particular tongue which spread all the way from Syria, Mesopotamia, Arabia, Egypt, and across the rest of North Africa. The parent body of the Semitic languages was a "proto-Semitic" language, which never existed as a single

unit, but was manifest in several dialects. Historical linguists believe that no one Semitic language is solely representative of the prototype. A linguist of Semitic languages said that epigraphic South Arabic may have been the nearest to the prototype in phonology, while other Semitic languages may have been closer to the morphology of the prototype.[1] The general characteristics of the Semitic languages are that they have "a large number of common elements in their phonology, morphology, vocabularly, and syntax; they also share certain common tendencies in their evolution."[2] Recently, a hypothetical structure of proto-Semitic phonology and morphology was formed; however, a detailed discussion of Semitic comparative linguistics is not the purpose of this study. Only a brief linguistic analysis of Syriac and Arabic will be given as applicable for an understanding of their linguistic structures so that the reader will have a better background for comprehending the nature of this study.

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[1]Wolf Leslau, "Semitic Languages," Encyclopaedia Britannica (1963), XX, 314.

[2]Sabatino Moscati, (ed.) An Introduction to the Comparative Grammar of the Semitic Languages: Phonology and Morphology (N. S., Vol. VI of Porta linguarum orientalium, eds. Bertold Spuler and Hans Wehr. Wiesbaden: Otto Harrassowitz, 1964), p. 3.

The position of Syriac in the Semitic family of languages. The term Syriac can be applied to a group of Semitic dialects, classed under its parent source, Aramaic, which was part of a division called Northwest Semitic languages. Other groups of Semitic dialects classed under this geographical heading were Canaanite (Hebrew, Moabite, and Phoenician), Ugaritic, and Amorite. The general classifications of these Semitic dialects are generally accepted by linguistic specialists of Semitic languages.[3]

Aramaic referred to the language of certain parts of Syria and Mesopotamia, the term's root being derived from Aram, the inhabitants of which were called Arameans. This linguistic group of people conquered the area from Mesopotamia to Syria-Palestine and northern Arabia. In the eighth century B.C. Aramaic became the international language in the Near East, including Persia. For over one thousand years Aramaic existed as the lingua franca of the Near East, being replaced in certain geographical locations by Greek after the days of Alexander the Great. Aramaic survived in localities, each with its own dialect and script; even today, it is dialectically spoken by residents of some villages north of Damascus, in a tongue not differing much from that

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[3]Leslau, loc. cit., and Theodor Nöldeke, "Semitic Languages," Encyclopaedia Britannica (11th ed.), XXIV, pp. 618-621.

spoken by Palestinians during the days of Christ.[4]

Aramaic's three branches: Old Aramaic, West Aramaic, and East Aramaic. The first branch represented the oldest division existing from 1000 B.C. to nearly the first century B.C. Artifacts representing this first branch indicated that this language was used by the Assyrian, Babylonian, and Persian empires, besides being manifest in Old Testament artifacts. West Aramaic included Nabataean which was spoken by Arab inhabitants of Petra until the third century A.D., Palmyrene which was the language of the Arab population of Palmyra until the third century, Jewish Palestinian Aramaic used by Palestinians during the time of Christ, Samaritan Aramaic, Christian Palestinian Aramaic written in Syriac characters, the Melkite language used between the fifth and the eighth centuries A.D., and a few dialects around Damascus which are still in existence today. East Aramaic consisted of Babylonian Aramaic of the Jews of Babylonia whose writings dated from fourth to sixth centuries A.D.; Mandaean which flourished from the third to the eighth century A.D. and was spoken by the Gnostic Mandaeans; the language used around Mosul, heard even today; and lastly, Syriac, which first

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[4]Raymond A Bowman, "Syriac Language and Literature," (Int'l. ed.) 1964, Encyclopedia Americana, XXVI, p. 193; William James Martin, "Aramaic and Syriac Languages," Chamber's Encyclopaedia (new ed.) 1955, I, p. 517; Nöldeke, op. cit., p. 623.

developed as the language of Edessa, and whose script extant in manuscripts today is of the primary concern of this thesis.[5]

II. BRIEF HISTORY OF SYRIAC-SPEAKING PEOPLES IN THE MIDDLE EAST UNTIL THE ELEVENTH CENTURY

The application of the term Syriac came into being in more than one Middle Eastern location. It was used at Edessa in western Mesopotamia as a literary language. However, the Palestinian Jews and Christians called their language Syriac, as did Persians and Greeks as well, when referring to the language of the Babylonian Aramaeans. Yet, among these "Syriac" dialects, the one which became the most used and played the greatest part in the development and popularity of the Syriac language was the dialect spoken at Edessa.[6]

In tracing the history of the Syriac language and script, a brief historical background of northern Mesopotamia in relation to Syriac-speaking communities will be necessary to understand the complex foreign elements effecting the translators of Greek into Syriac, and later the selection of Nestorian translators by Abbasid patrons. (Chapter V).

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[5] Moscati, op. cit., pp. 10-12.

[6] Nöldeke, op. cit., p. 625.

Edessa, located in northern Mesopotamia, in the principality of Osrhoëne was reported by Eusebius to have been one of the first cities in Mesopotamia to be converted to Christianity.[7] In the middle of the second century A.D., a group of Edessan Christians translated the Old Testament from Hebrew into Syriac (Peshitta version) in order to check the authority of an Alexandrian version of the Old Testament which had been written in Greek around 132 B.C. In bringing forth the Peshitta version and comparing it with the Alexandrian version, the Syriac-speaking Edessans first came into contact with Greek science, medicine, literature, and language.[8]

School of Edessa. The famed school at Edessa was established about 365 when the Christian Syriac-speaking inhabitants of Nisibis, a town in the same principality, moved to Edessa which had become part of the Persian Empire.[9]

Formation of Nestorian Branch. In 431 Nestorius, the Patriarch of Constantinople, was deposed by the Council of

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[7]Allen O. Whipple, "Role of the Nestorians as the Connecting Link between Greek and Arabic Medicine," Annals of Medical History, n.s., VIII (1936), p. 315, citing Eusebius, "The Legend of Abgar," Histoires ecclésiastiques, I, chpt. 13.

[8]Ibid., p. 318.

[9]Ibid.

Ephesus because of doctrinal heresy involving a Christological argument.[10] His followers, called Nestorians in 435, formed the Eastern Syrian Church, one of its centers being Edessa.[11] In 489 the Emperor Zeno closed the School at Edessa, some of whose Nestorian (Syriac-speaking) residents fled to Nisibis in Persia, thus refounding the Edessan School.[12] Another portion of the fleeing Nestorian residents of Edessa settled in Junde-Sapor a community of southwest Persia in the Sassanian Empire, whose rulers patronized them. Greek scholars of the School of Athens also settled in Junde-Sapor after the Athenian School closed in 529. These Greeks brought with them neo-Platonic ideas and other Hellenic thought in exchange for Persian, Nestorian, Greek, Jewish and Hindu thought. At the Junde-Sapor center instruction was done in Syriac and Aramaic. Because of Nestorian prominence, Persian, Greek, Jewish, and Hindu sources were translated into Syriac texts.[13]

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[10] Ibid., p. 419.

[11] Bowman, op. cit., p. 195.

[12] Ibid., and Whipple, op. cit., p. 320, citing Assemani, Bibliotheca orientalis, 1:352, 3:pt. II, 429; Patr. orient., 7:128.

[13] Whipple, op. cit., p. 321; and George Sarton, From Homer to Omar Khayyam (Vol. I of Introduction to the History of Science. Published for the Carnegie Institution of Washington by Baltimore: Williams & Wilkins Co., 1927), pp. 400, 423, and 425.

At the cultural and intellectual center of Junde-Sapor, scientific and medical knowledge for several centuries was the greatest in the civilized world. After the advent of Islam, Muslim caliphs in Syria and Iraq recruited their court physicians from the wealth of available Syraic-speaking, trained, intelligentsia at Junde-Sapor.[14]

Other scholastic centers of parallel function contemporary with the Edessan, Nisibin, and Junde-Sapor schools were Syriac monasteries; one located at Mosul, another on the left bank of the Euphrates, and still another near Seleucia.[15]

Monophysites and Jacobite branches. Besides these Eastern Syrian Christians maintaining cultural centers in northeastern Mesopotamia and southwestern Persia, there was a group of Syriac-speaking Christians who formed the western branch of the Syrian Church. The name given to this western branch was Monophysite, as opposed to the term Dyophysite which applied to the Nestorians, reflecting the nature of the Christological schism that separated the two Syriac-speaking groups.[16] The Monophysites, as well as the Nestorian

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[14] Whipple, Ibid.

[15] William Wright, A Short History of Syriac Literature (London: Adam & Chas. Black, 1894), pp. 21-22.

[16] J. H. Kramers, "Science in Islamic Civilization." Analecta Orientalia: Posthumous Writings and Selected Minor Works of J. H. Kramers (Leiden: E. J. Brill, 1956). II, p.116.

Christians, came into contact with Greek thought and manuscripts, both groups translating them into the Syriac language (See Chapter IV).

In order to explain variants of Syriac script it will be necessary to mention briefly the historical developments of the Monophysite branch of Syrian Christianity. In the sixth century, a bishop of Edessa, Jacob Burde'ana, commonly called Baradaeus, controlled the Syrian Church throughout Asia. Because of his appealing doctrinal beliefs, he influenced Syriac-speaking residents of Edessa, as well as the Monophysite branch in the west, to follow his teachings, laying the foundation for the Jacobite branch of Syrian Christianity, whose members were to become nearly as intellectually fruitful as their Nestorian counterparts in Syria, Persia, India, and China.[17] The Jacobites had a greater contact with the Byzantine Empire than had the early Nestorians, whose relations with the Persian Empire (Sassanian) were quite close. Because of the two cultures, east and west of the Syriac-speaking Christians, influences

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[17] Wright, op. cit., pp. 85-86. Cf. Anton Baumstark, Geschichte der syrischen Literatur mit Ausschluss der christlich-palästinensischen Texte (Bonn: A. Marcus & E. Webers Verlag, 1922), pp. 174-175; Adolf Rücker, "Die Syrische Literatur," Semitistik, Handbuch der Orientalistik, ed. Bertold Spuler, Vol. III, Pts. 2-3. Leiden: E. J. Brill, 1954), pp. 177-195; F. L. Cross, The Oxford Dictionary of the Christian Church (London: Oxford University Press, 1957), p. 708.

of both Greek and Persian origins entered the Semitic Syriac language.

The Sabeans. A third group of Syriac-speaking Mesopotamians grew up at the same time as the Jacobites. The new group were Sabeans, comprising a pagan community of star-worshippers in Harran and vicinity, a few miles south of Edessa. Unfortunately no manuscripts have been discovered attributed to the Harranians.[18] In Chapters III and IV the Sabeans will be discussed in relation to astronomy and again in reference to Thabit ibn Qurra of Harran.

Syriac's effect upon the Middle East. In the sixth century Syriac exerted a force in both east and west. In the eastern part of the Roman Empire, Syriac was used as the second most important language, only subordinate to Greek. In Persia, Syriac occupied a position as an even more prominent cultural organ than Persian itself.[19] In the latter part of the seventh century a native of Antioch who was to become one of the greatest figures of the Jacobite branch tried to Hellenize the Syriac script. This man, Jacob of Edessa, was not only a historian, philosopher, theologian, grammarian, but a translator as well. He introduced to the

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[18] Norman M'Lean, "Syriac Literature," Encyclopaedia Britannica (11th ed.), XXII, p. 311.

[19] Nöldeke, op. cit., p. 625.

Syriac script vowel points taken from Greek, greatly affecting the pattern of Edessan Syriac. Jacob then wrote a grammar explaining his system to the Syriac-speaking community around Edessa.[20] According to William Wright the Jacobites used Jacob's system up to the twentieth century. Strange as it seems, the script system for the western Syrian Church was developed in the heart of the Nestorian community.

The Jacobites and the Nestorians produced Syriac works, mainly of a theological nature in the form of letters, ecclesiastical histories, homilies, apologetic works, and treatises. Some secular works, such as Syriac grammars,[21] were written, but were done primarily for the benefit of clarifying biblical and theological items. Syriac translations of Greek works will not be discussed at this point as there is an entire chapter devoted to the Syriac and Arabic translations of the Hellenic tradition.

Height and downfall of Syriac from fifth to eleventh centuries. The fifth to the eighth centuries was the period when Syriac literature flourished. At the same time it was the greatest period of language development for Syriac, which

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[20] Wright, op. cit., pp. 141-143, 151-153, citing Bar-Hebraeus in his Kŭthābha dhĕ-Semhē as quoted in Martin, Jacques d'Édesse et des voyelles syriennes (Journ. Asiat. 1869, Vol. XIII, pp. 458-459) or pp. 194-195 of Martin's ed.

was split into two segments, one at Edessa and vicinity and the other in western Syria and along the borders of the Byzantine Empire. Two distinct systems of punctuation developed

> of which the western /was/ the more convenient, but the eastern the more exact and generally the more in accordance with the ancient pronunciation; it /had/, for example, ā in place of the western ō, and ō in many cases where the western Syrians pronounce ū. In later times the two systems have been intermingled in various ways.[22]

With the rise of Islam in the late seventh and early eighth centuries, Syriac-speaking communities coming under direct Arab-Muslim influence began to shift their secular writings and spoken conversations into Arabic. The process of shifting completely into the spoken and written language of the Arab conquerors took about four centuries,[23] however, literary and ecclesiastical Syriac continued for several centuries. About the eleventh century the Aramaic, hence Syriac-spoken tradition of the Near East, encompassing Syria, Mesopotamia, and Persia, diminished to such an extent that the Arabic spoken and written in the capital cities of Damascus, Baghdad, and Samarra replaced the Syriac causing it later to enter the lists of dead languages.

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[22] Nöldeke, loc. cit.

[23] Bowman, loc. cit.; Nöldeke, loc. cit.

III. BRIEF LINGUISTIC ANALYSIS OF THE SYRIAC LANGUAGE

In comparative Semitic grammars, Aramaic is sometimes substituted for Syriac since the formation of Syriac is directly derived from Aramaic. For the purposes of this study, Aramaic will be referred to only when source information failed to be available for Syriac.

Dr. Raymond A. Bowman, authority on Syriac at the Oriental Institute at the University of Chicago, has said that from a structural point of view, "Syriac is almost identical with the earlier Aramaic, agreeing with it phonetically, morphologically, lexically and syntactically, in contrast to Hebrew and Arabic."[24] The only way Syriac differed from Aramaic was due to the influence of the Greek language upon the former. For example, the introduction of auxiliary verbs of "to be," non-existent in pure Semitic languages, entered Syriac through the Greek language. Such an influence aided translating Greek texts into Syriac, specifically in regards to philosophical and logical terms, which were partly lacking from other Semitic languages, Arabic included, except where a foreign, western influence left by Greek or other Indo-European languages had affected that particular Semitic language. Professor Bowman went on

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[24] Bowman, op. cit., p. 193.

to say that in later Syriac linguistic development, Jacobite translators in contact with the Byzantine Empire "followed the Greek idiom so slavishly as to destroy the Semitic character of the language."[25]

The following section contains the main parts of the Syriac language; alphabet, scripts, phonology, and morphology.

Alphabet. The alphabet consisted of twenty-two letters written in angular forms slanting a bit to the left, and written in typical Semitic style from right to left.[26] The oldest inscribed artifacts of the Syriac language extant have been dated 73, and were similar to the writing on Edessan coins from the first century A. D. The letters of the alphabet were unconnected, but with few ligatures. Gradually the letters became connected and the oldest Syriac alphabet, called Estrangela, was formed. According to Dr. Bowman the earliest sample of the Estrangela script was a codex from Edessa dated 411.[27]

Script. There were five major Syriac scripts; Estrangela, Nestorian Estrangela, Serta, Melkite and

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[25] Ibid., p. 194.

[26] Enoch Hutchinson (trans.), Uhlemann's Syriac Grammar Translated from the German...with a Course of Exercises in Syriac Grammar and a Chrestomathy and Brief Lexicon (New York: D. Appleton & Co., 1855), p. 27.

[27] Bowman, loc. cit.

Palestinian (also termed Old Palestinian and Syro-Palestinian).[28] The evidence given in early samples of the different scripts showed that the letters varied slightly in shape depending upon the substance written upon, such as papyrus, vellum, paper, stone, or some other form of writing material. For example, letters inscribed on stone or hard substances (paleographical evidence) appeared more angular and stiff than those written with a pen on a plane, smooth surface (epigraphical evidence) which were more cursive, flexible and round.[29]

Estrangela. The earliest of Syriac scripts, was Estrangela evident in the first two decades of the fifth century, according to the American authority on dating Syriac manuscripts, Dr. William H. P. Hatch, Professor at the Episcopal Theological Seminary, Cambridge, Massachusetts, who said that Estrangela is representative of "the most beautiful of all Syriac hands."[30] It was the Estrangela script which the Nestorians adapted to their own use. The development of the script progressed in the sixth and seventh centuries as evidenced by scribal calligraphic art of the period. During

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[28] William Henry Paine Hatch, An Album of Dated Syriac Manuscripts (Monumenta paleographica vetera. Boston: American Academy of Arts and Sciences, 1946), pp. v and 29.

[29] Ibid., pp. 24 and 25.

[30] Ibid., p. 24.

the first fifty years of the eighth century, a second style of writing called Serta became manifest in Syria and Mesopotamia, developing through Monophysite and Jacobite channels. The presence of the Serta script, which was more compact and less precise than Estrangela, caused a deteriorating effect upon Estrangela. Near the end of the 900's Estrangela script was revived, and Professor Hatch stated that "many of the well written codices of the late tenth, as well as of the eleventh and twelfth centuries, were produced under the influence of this revival."[31] Around the mid-sixteenth century the last specimen extant today of Estrangela script was reported to have been in existence by Professor Hatch. Yet, after the later part of the sixteenth century, samples of good Estrangela letters had not been uncovered.[32]

Serta. The Jacobite or Serta script, attributed to Jacob of Edessa, was derived probably from a minuscule script used in the 500's. The oldest codex in Serta, dated by Hatch, was written in 731-732. Henceforth the new script began to flourish. Two general periods of Serta manuscripts have been devised: the first dating from 700 to 1100, during which time specimens were clear and legible; the second from 1100 until the late 1500's when there was some evidence of careless

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[31] Ibid., p. 26.

[32] Ibid., pp. 26-27, and 46.

and speedy mss. copying.[33]

Nestorian. The hand used by Nestorians in manuscript writing and copying was taken from the Estrangela script, the main difference being Nestorian vowel points, of which the writer of this thesis was unable to discover any further evidence. Two divisions have also been constructed for the Nestorian script: the first period spanned the seventh century to the mid-thirteenth century after Christ; the second period continued from the second half of the thirteenth century to the middle of the sixteenth century. In the latter period Nestorian script style began to change from the Estrangela form towards the Serta script.[34] The specimens which Professor Hatch listed indicated that Estrangela and Serta samples were more common than their Nestorian equivalents. Secondly, in his printed collection of Syriac manuscript specimens Professor Hatch did not include any copies of the Abbasid translators' works. His sampling appeared to be a group of religious and biblical plates showing Syriac scripts. However, it is the writer's opinion that the script used at the Baghdadi translating schools was most likely to have been Nestorian Estrangela. The majority of the translators at the translation centers were Nestorian

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[33] Ibid., p. 46; Bowman, op. cit., p. 194.

[34] Hatch, op. cit., p. 28 and 46.

Christians, most of whom were trained in Nestorian intellectual centers during the eighth, ninth, and tenth centuries. Therefore, a conclusion could be made that the scripts used by these men in translating and copying Greek texts was Nestorian Estrangela.

Melkite. The script written by the Melkite, Syriac-speaking Christians located primarily in the Byzantine Empire, specifically around Antioch, developed from Serta, yet resembled both Estrangela and Nestorian Estrangela as well. The only extant mss. copies Professor Hatch found were of a late period, from 1045 to the later half of the 1500's.[35]

Palestinian. The script of the Melkite Palestinians, sometimes referred to as Old Palestinian or Syro-Palestinian, was angular and stiff, similar indeed to the Estrangela script. Yet, the letters themselves indicated a more archaic nature, with an affinity to ancient Palmyrene cursive inscriptions, as was indicative in the early Estrangela letters. Very few specimens were extant of Palestinian script (and many of the ones which have been discovered are not dated) are palimpsests or both.[36]

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[35] Ibid., p. 29.

[36] Ibid., pp. 29-30.

Phonology. The phonetic sounds of Syriac, derived from Aramaic, were taken from a proto-Semitic phonetic system as were all Semitic languages.[37] As in some of the west Semitic languages, certain consonants were omitted completely or interchanged frequently. Syriac also exemplified this phenomenon in many cases, specifically in the use of h.[38] In discussing vowel notation, Syriac's origin occurred in the second part of the first millennium after Christ and was "characterized by the predominance of qualitative over quantitative distinctions."[39]

> There /were/ two different methods of vowel notation, the Eastern (used by the Nestorians) and the Western (used by the Monophysites or Jacobites); the latter /was/ based on Greek vowel symbols:
>
> Eastern: ◌̣ a, ◌̄ ā, ◌̤ e, ◌̱ ē, i/ī, u/ū, o/ō
>
> Western: ◌ a/ā, ◌ o/ō, ◌ e/ē, ◌ i/ī, ◌ u/ū[40]

To be more specific, Syriac was first written with no vowels. Weak consonants (w and y) indicated long vowels, diphthongs, and sometimes short vowels. As the script developed, dots or diacritical marks were inserted with consonants for clarification. In the fifth century the

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[37] Louis H. Gray, Introduction to Semitic Comparative Linguistics (Morningside Heights, New York: Columbia University Press, 1934), pp. 8-11.

[38] Moscati, op. cit., pp. 42-45.

[39] Ibid., p. 51.

[40] Ibid., p. 54.

eastern Syriac-speaking Christians (Nestorians) concocted a system of vowel points arranged in such a manner as to result frequently in a confused system of writing. The Jacobites in the west under Byzantine influence "produced a much simplified, but less precise, system of vowels by the 8th [sic] century. This was derived from the various Greek vowels to be written above or below the consonants."[41] At a later date extant west Syriac mss. indicated a combined system of Nestorian vowel points with a western vocalization pattern.[42]

There was a phonetic distinction between eastern and western vocalizations. The former continuing a more ancient one, and the latter employing phonetic vowel developments: $\bar{a} > \bar{o}$, $\bar{o} > \bar{u}$, $o > u$, and $\bar{e} > \bar{i}$. Syriac did not possess a diacritical mark to indicate the absence of a vowel, yet such a symbol in certain positions had to be assumed. In concluding this section on morphology, a development was noticed in the syllabic structure and incidence of stress in Syriac vocalization in comparing it with its Semitic prototype.[43]

Morphology. Semitic languages in general are composed of a consonantal root system, the majority of which are

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[41] Bowman, loc. cit.

[42] Ibid.

[43] Ibid.

triconsonantal in nature, each root conveying a basic meaning: e.g., ktb "to write," qtl "to kill," and drs "to study."[44] Derived meanings from the roots (mostly composed of three radicals) develop depending upon radical doubling, prefixed and suffixed radicals, and vowel changes. Almost every part of speech except particles and pronouns is affected by the root source and its meaning. Gender consists of masculine and feminine. Noun numbers are composed of singular, plural and dual, as are verbs as well. Case declensions contain three categories: nominative, genitive, and accusative.[45]

IV. PLACE AND DEVELOPMENT OF ARABIC IN THE SEMITIC FAMILY OF LANGUAGES

There existed varying philological arguments as to the true position of Arabic within the Semitic language family. One school of thought suggested that Arabic is a part of the south Semitic language group, and the sole representative of the southwest Semitic language. The same western philological school also argued that South Arabic and Ethiopic languages should naturally fall into the Southeast Semitic division.[46] An opinion expressed by a second school of

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[44] Ibid., p. 71.

[45] Ibid., pp. 86 and 94.

[46] Leslau, loc. cit.

Semitic language philologists was that Arabic should be classed under a northern division of a general southern branch of Semitic languages, while south Arabian and Ethiopic should be placed under the southern division of the general southern branch of Semitic languages.[47]

Since neither the purpose of this study is to present a hypothetical framework for the origin and development of Arabic in the Semitic family of languages, nor the writer's intention is to prove a historical linguistic hypothesis of the geographical beginnings of Arabic or its prototype, historical evidence related to either point will not enter into the following discussion.[48]

Even views expressed concerning the origins of classical Arabic are as numerous and theoretical as the possibilities of determining dialectal origins of Arabic.[49]

For this study the arguments for the pre-Islamic origins of the Arabic language have no major effect upon the development of the spoken and written language within the

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[47] N. V. Yushmanov, The Structure of the Arabic Language, trans. Moshe Perlmann (Washington, D. C.; Center for Applied Linguistics of the Modern Language Association of America, 1961), p. 1.

[48] A complete history of the Arabic languages and literature is contained in "Arabiyya," The Encyclopaedia of Islam (new ed., Leiden: E. J. Brill, 1960), Vol. I, pp. 561-603.

[49] Chaim Rabin, Ancient West-Arabian (London: Taylor's Foreign Press, 1951), p. 17.

translation centers of the Abbasid Caliphate.

The term Arabic language can mean the spoken idiomatic dialects used by speakers in past Islamic and caliphal history, besides meaning twentieth-century dialects heard from the Maghrebi west in Morocco and Algeria to the eastern regions of Iraq and Arabia. At the same time the Arabic language can refer also to the classical, literary language derived from a certain combination of Koranic and ancient poetic Arabic, the historical details of which are still not clear or certain. Still, a third type of Arabic language exists today, called modern standard Arabic, usually derived from secular periodicals and newspapers of the Arab world. The third type contains the least amount of pure Semitic word roots.

Until the birth of Islam in the first quarter of the seventh century after Christ, Arabic was limited to the various dialects spoken by Arab Bedouins in the Arabian Peninsula. With Islam came the Koran, the revealed word of God to the residents of Mecca. The language of the Koran has been argued to have been both the dialect of the Koraish, the particular tribe of the Prophet Muhammad and his family, and the Meccan dialect. Many Arabists in the western world believe that the language of the Koran is generally composed of the dialect spoken by the inhabitants of Mecca with other component dialectal influences such as tribal tongues used

by Bedouins in the Hijaz,[50] in the Yemen, and elsewhere in Arabia. Koranic Arabic is even supposed to have etymological influences of Aramiac, Greek, Persian, and Ethiopic.[51]

Islam grew from a tribal religion professed by a small group of Meccan inhabitants in A.D. 620 to the major faith of Arabia in the early 630's. By the ninth century after Christ, Islam had grown to be the caliphal religion from the Umayyad Emirate south of the Spanish Pyrenees, across the entire northern expanse of Africa, from the Sinai Peninsula and the Euphrates to the Indus and Syr Darya rivers during Abbasid domination. Wherever Islam and the Arabs conquered, Arabic became the adopted tongue, often replacing the local tribal dialect, or dialect related to another Semitic language, such as Syriac or Aramaic, or even an Indo-European dialect. Not only did Arabic triumph as the political and commercial language of the government, but as the religious media of communication, culture, and education. The extent of Arabic's permeation into rival religious tongues was evident in Maltese (Maghrebi Arabic phonetics with a Latin script) and Gershuni (Syriac script with Arabic phonetics).[52]

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[50] The Hijaz is the northern and central western region of the Arabian Peninsula bordering the Red Sea.

[51] Nöldeke, op. cit., pp. 626-627; Rabin, op. cit., pp. 19-20; and Yushmanov, op. cit., p. 4.

[52] Hatch, op. cit., p. 42.

V. A BRIEF CULTURAL HISTORY OF ARABIC-SPEAKING PEOPLES IN SYRIA AND BAGHDAD UNTIL THE TENTH CENTURY

The purpose of this section is not to give a hasty outline of a history of the largest, the most sophisticated and civilized empire between the eighth and tenth and eleventh centuries around the Mediterranean. An attempt will be made, however, to trace generally the history of the Arabic-speaking Umayyads and Abbasids in Damascus and Baghdad, respectively, so that a proper perspective of the cultural history surrounding translating bodies of Greek texts will be drawn.

The caliphal rule of Umayyads and Abbasids was as distinct from each other in cultural development as the Idrisids in the Maghreb during the late eighth century differed from the later Maghrebi dynasty of the sophisticated Merinides. The Umayyads as such were the descendants of the true Arab Bedouin possessing no great cultural tradition or academic heritage. His only language was that of the desert nomad; and his religion the revelation to a Meccan Arab from God. How was it that individuals from nomadic lives with a simple uncomplicated religion could alter the comparatively developed cultures of Persia, Syria or Egypt so forcefully? Within the first century of Islam, Syrians, Persians, Coptic

Christians, and others embraced the new belief of the Arab Bedouin. These new converts also married into the Arabian society and their previous national or cultural identity became absorbed into the new Islamic society. Even the ethnic definition for an Arab changed and a new meaning came into existence. The term Arab henceforth meant a person "who professed Islam and spoke and wrote the Arabic tongue, regardless of his racial affiliation."[53]

The Umayyad culture never achieved the intellectual calibre which the Abbasids perfected in Baghdad. Yet during the latter part of the Umayyad rule in Damascus, an intellectual atmosphere began to thrive, paving the way for later Abbasid accomplishment in contributing to the framework of Islamic civilization.

During the first Islamic dynasty, the Umayyad, foreign, national, and cultural elements entered the Arab Muslim life. From Persia, Syria, Egypt, and the Maghreb (the area encompassing the furthest north-west section of Africa) non-Muslim, non-Arab, cultural traits effected the monolithic quality of the Umayyad dynasty. One example of Umayyad confrontation with foreign ideas was the case of John of Damascus, later canonized by the Roman Catholic Church.

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[53] Philip K. Hitti, History of the Arabs from the Earliest Times to the Present (seventh edition; London: Macmillan & Co., Ltd., 1960), p. 240.

John was a Syrian who spoke Greek, Aramaic, and Arabic. He came from an influential Christian Damascene family, who had first served the early Umayyad caliphs as comptrollers or financial administrators. Through John's intellectual achievements, "Greek thought" and "Christian lore" entered Muslim Damascus which appears in his written dialogue between himself and a Muslim ("Saracen") on various doctrinal differences between Christians and Muslims. One Arabist has even said that St. John influenced the thinking of the Qadarite philosophical school of Islam.[54] His greatest legacy to early medieval history was his use of Platonic and Aristotelian thought in writing Christian theological doctrine for the Eastern Greek Church (to be discussed in Chapter IV).

Cultural achievements of the Umayyads were few. However, some scientific achievements can be proved. This is true especially of the "Greek tradition." In medicine the early Umayyads sought Greek and Persian sources in the hands of Greek and Syriac writing medical men in Alexandria, Harran, and Antioch. Alchemy and astrology too, like medicine, were developed from Greek and Coptic sources. The main drawback in discussing any further Umayyad achievements in the fields of science is that no documents exist as

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[54] Ibid., pp. 245-246.

primary sources, from which a historian could reconstruct a fact, incident, etc.[55]

There was one great achievement which helped to stabilize the Arabs/Muslim monolith during the early Umayyads, and that was the standardization of Arabic grammar.

In the first century of Islam there were two major types of Arabic: the classical Arabic in which the Koran was written and by right the legally accepted tongue of communication; and the language spoken by poets derived from the pre-Islamic (Jahiliyah) period. Minor types of Arabic were the results of non-Arab converts to Islam changing the proper pronounciation of classical Arabic and military expeditions coming into contact with other dialectal groups in Yemen, Bahrein, or Qatar.[56]

During the late seventh century and the early part of the eight century A.D. (second century A.H.) the standardized form of the Arabic grammar was made by Abu-al-Aswad al-Du'ali in Basra, which was one of the two locations of Umayyad intellectual development. In the mid-eighth century a second Basrite savant, al-Khalil ibn-Ahmad, compiled an Arabic dictionary, entitled Kitab al-'Ayn (lit. the Book of the Eye), which established the rules for Arabic prosody. Not

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[55] Ibid., pp. 254-256.

[56] Nöldeke, op. cit., p. 627.

long after, Sibawayh, pupil of al-Khalil ibn-Ahmad, constructed an Arabic grammar, which became the first systematic textbook of its kind.[57]

During the Umayyads, other signs of cultural development also occurred which were mostly related to internal theological and philological facets of Islam. Through Koranic study came philology, lexicography, and the science of hadith (lit. tradition or narrative). The hadith gave birth to Arabic historiography. Oratory also arose through internal Islamic stimuli. And poetry continued with the Jahiliyah tradition of mainly secular and worldly topics.[58]

Thus, the foundation for Abbasid cultural development had been laid partly by the Umayyads of Damascus. Basra, and its twin city, Kufah. With the political take-over by the Abbasids in the middle of the eighth century, an international atmosphere was introduced to the Islamic Middle East which was to supply the component parts of a construct Abbasid culture.

With the Abbasids (the name derived from their first caliph Abu-al-'Abbas) came a dynasty which was to reign under varying forces and with fluctuating strengths for over five centuries. In 762 A.D. the construction of Baghdad, the main

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[57] Hitti, op. cit., pp. 241-242; and Nöldeke, loc. cit.

[58] Hitti, op. cit., pp. 242-243, 249-250.

Abbasid capital, which was officially called Madinat al-Salam or "city of peace," was begun by the Caliph al-Mansur on the banks of the Tigris. Geographically, Baghdad lay in the heart of the fertile crescent possessing ruins of past civilizations of Babylon, Nineveh, and Ur.[59]

Where the Umayyads' cultural preoccupation was with internal concerns of their religion and language, the Abbasids, at an early phase of rule, were swept into the formation of an international empire by permitting external forces to arouse cultural progress within the Abbasid sphere of activity.

The major external force of a political nature came from Persia through the Barmakid family who supplied the system of wazirs (vizirs in Persian) or ministers to the Abbasid caliph. The offices of the wazirs became as powerful, if not more powerful, than even the caliph's. Through the wazirial system, power and corruption eventually became so potent that at the beginning of the tenth century the Persian offices were abolished and a new caliphal administrative organization begun.[60] Generally speaking, wazirial influence upon the caliph was so great that even in his cultural

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[59] Rom Landau, Islam and the Arabs (London: George Allen & Unwin, Ltd., 1958), p. 59; and Hitti, op. cit., pp. 292-293.

[60] Ibid., p. 319.

achievements (such as the establishment of the Bayt al-Hikmat in Baghdad) their political power was felt.

Two other external forces came from the east. Certain elements of Indian mathematics entered Abbasid intellectual life and from Persia came esthetic appreciation through art and belles-lettres.[61]

A fourth external force came from Syria, whose entrance was logical, since the Abbasid Caliphate absorbed the lands of eastern Umayyad control. A Hellenic tradition had developed in Syria through Greek intellectual impact upon both Aramaic, and later Syrian culture. Syrian soil provided the breeding ground for the transmission of Hellenism, first reaped by Islamic civilization through the centers of Abbasid intellectual activity and patronage.

The fifth and most important external force, the subject of the present thesis, was translated into Syriac and Arabic, making it possible for Abbasid and other Arab-Islamic intellectuals to create newly developed treatises, theories and ideas, later transplanted into European soil, stimulating the birth of the Renaissance.

VI. BRIEF LINGUISTIC ANALYSIS OF ARABIC

As an explanation of Arabic's place in the Semitic family of languages was given in Part IV of this chapter,

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[61] Ibid., pp. 307-308.

this section contains the following components of the Arabic language; alphabet, scripts, phonology, and morphology.

It has been said that

> Arabic stands out among the Semitic languages because of its richer sound system, an exceptional development of forms and vocabulary, and an astounding propensity for set patterns of word formation and word change which makes Arabic grammar look "algebraic," as some scholars put it, and sometimes gives an impression of artificiality.[62]

Alphabet. There are twenty-eight letters in the Arabic alphabet, of which three (alif ا, ya ي, and waw و) are also considered long vowels.[63] There also exist three short vowels, the equivalent of the English u, a, and i, besides two diphthongs au (aw) and ai (ay). In Koranic Arabic diacritical marks indicating the three short vowel sounds are written immediately above the sounded consonant. The modern literary language, however, normally omits the diacritical symbols.

Scripts. Arabic has always been written from right to left on a horizontal line. North-Arabic script, the source of Koranic (classical) and modern literary Arabic, was derived from the cursive script of the Arameans.[64] There

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[62] Yushmanov, op. cit., p. 4.

[63] Sometimes the hamza ء or glottal stop is considered a separate letter, which would make twenty-nine letters in the alphabet.

[64] Yushmanov, op. cit., p. 18.

were two main script types: the first called Kufic, taking its name from the Umayyad urban center of intellectual activity, was said to have been influenced by Syriac's angular shape of letters. Nashki, the other commonly used Arabic script, was more cursive and round in alphabet shape. There existed evidence that nashki script, derived from a north Semitic alphabet, was used as early as the Meccan period (during the Prophet's lifetime). Nashki was the script used by the Abbasid translators and which influenced the aesthetic aspect of Arabic calligraphy. In contrast to the history of Greek, Latin, and Coptic scripts and word formation, Arabic was one of the few scripts used in the northern and eastern Mediterranean area which from early development used word separation.[65]

Phonology. Pre-Islamic Arabic has given Semitic historical philologists no evidence as to its vowel system. Not until years after the advent of Islam were diacritical points introduced into the scripts, which one renowned Arabist said was due to the influence of Syriac, whose original influence came from Greek.[66] During the early

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[65] Kramers, op. cit., pp. 87-88.

[66] Ibid; and Sami A. Hanna and Naguib Greis, Writing Arabic: A Linguistic Approach: From Sounds to Script (Salt Lake City, Utah: Middle East Center, 1965), p. 5.

classical period, two other vowel phonemes existed, e and o, yet both were later absorbed into the long a or alif phoneme.[67] Arabic's dialectal history and traditional grammar led the phonologist to conclude that many variations were evident in vowel timbre.[68]

Morphology. Arabic has been compared with Latin in that both languages were synthetic and inflectional; while in contrast to English, Arabic has been said to be "predominantly analytic." The syntax-noun relationship in Arabic occurs through case endings with verbal inflection taking place by use of prefixes, infixes, and suffixes indicating "persons, numbers, genders, derived forms, moods, and tenses."[69] There are three parts of speech in Arabic, noun, verb, and particle. Nouns and verbs are derived from roots usually triconsonantal in construction. For example, the root "ktb": kataba means he wrote, kitab refers to book, katib is writer, kitabat means writing, maktab is office, and maktabat refers to library. As in other Semitic languages, Arabic has three cases: nominative, accusative, and genitive; and two tenses: completed and uncompleted.

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[67] Yushmanov, op. cit., p. 12.

[68] Moscati, op. cit., p. 53.

[69] Farhat J. Ziadeh and R. Bayly Winder, An Introduction to Modern Arabic (Princeton, New Jersey: Princeton University Press, 1957), p. 20.

The factors underlying the selection of Nestorian translators during the Abbasid Caliphate in Baghdad were effected by the linguistic agility of the translators in Syriac and Arabic, the general historical development of the Syriac-speaking and Arabic-speaking peoples up until the eighth and ninth centuries after Christ, and the linguistic similarities between Syriac and Arabic making translating from the former to the latter a natural process.

The priceless content of the transmission of classical Greek thought through the Syriac and Arabic languages during Abbasid rule will be the topic of Chapter III.

CHAPTER III

THE BODY OF GREEK KNOWLEDGE TRANSMITTED

The general purpose of this chapter is to review the corpus of Greek knowledge transmitted in the light of modern research through recently uncovered manuscripts mostly located in the Muslim world and a few found in museums and libraries of Europe.

The organization of Chapter III is categorized by field of academic study or classical discipline, such as philosophy, medicine, astronomy, mathematics and astrology, the arts, and other sciences.

One limitation confronted the author in trying to collect data on the body of Greek knowledge, and that was no matter how complete or incomplete an investigation of such a type might be, the fact remains that only a portion of the entire corpus is known to both eastern and western scholars. As for primary source material, a meagre amount exists in Greek, Syriac, or Arabic, but the major amount still remains undiscovered or permanently destroyed.

I. PHILOSOPHY

The philosophical impact of Greek texts upon the Arabic-speaking world influenced the development of Arabic philosophy and logic to such a degree that "Arabic philosophy

/was/ wholly dependent on the Greek texts which reached the world of Islam."[1]

The first body of Greek philosophical writings transmitted into Syriac and Arabic were works by Plato, Aristotle, and their commentators. During early Umayyad rule a portion of the philosophy of the two Greeks was translated into Semitic tongues by St. John of Damascus for use by Muslims and Christians. Other works by Galen, some Neo-Platonists, and "a few Middle-Platonic authors" were read and translated by Syriac-speaking Christians. Greek texts of Aristotelian commentators, such as Nicolaus Damascenus, Alexander of Aphrodisias, Porphyry, Themistius, Simplicius, and John Philoponus were transmitted to Arab thinkers.[2]

The continuation of translation of Platonic works progressed during the height of the Baghdadi translating period (Hunayn's school), in which the Politics, Laws, and Timaeus of Plato were put into either Syriac or Arabic.[3] The Fihrist confirmed this fact. Evidence of the Laws was contained in an Arab compendium of al-Farabi, located in

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[1] R. R. Walzer, "Arabic Philosophy," Encyclopaedia Britannica (Chicago: William Benton, 1963), II, p. 188.

[2] Ibid.

[3] Lutfi Sa'di, "A Bio-Bibliographical Study of Hunayn ibn Is-haq al-Ibadi (Johannitius) (809-877 A.D.), Bulletin of the Institute of the History of Medicine, II (September, 1934), p. 423.

a ms. in Leiden, published in Arabic in the Oxford series Plato Arabus.[4] Part of the series contained evidence of Galen's Compendium Timaei Platonis taken from an early medieval Arabic ms. which showed more proof that the Timaeus had been translated and known at that time.[5]

Numerous works of Aristotle were known to have been translated during the ninth and tenth centuries. The Poetics had been translated into Syriac by the sixth century A.D. in translating centers of Mesopotamia and Persia.[6] Hunayn's school rendered part of the Organon and all of De Anima, Themistius' commentaries on Aristotle's Book on the Soul, the Metaphysics, Physics, Aristotelian Ethics with commentary by Porphyry and others into Syriac and some into Arabic.[7]

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[4]Francesco Gabrieli, "Un Compendio arabo delle Leggi di Platone," Revista degli studi orientali, XXIV (1949), p. 20; Richard Walzer, et al.(eds.), Plato Arabus (Corpus Platonicum medii aevi. 3 vols.; London: In aedibus Instituti Warburgiana, 1943-1953).

[5]Francesco Gabrieli, "Estudios recientes sobre la traductión griega en la civilizatión musulmana," Al-Andalus: Revista de la escuelas de estudia arabes de Madrid y Granada, XXIV (1959), p. 303.

[6]_____, "Intorno alla versione araba della Poetica di Aristotle," Rendiconti della Reale Accademia Nazionale dei Lincei: Classe di scienze morali, storiche, e filologiche, Ser. 6, Vol. V (1929), p. 230.

[7]Sa'di, loc. cit.; Muḥammed Ṣaghir Ḥasan, "Notes on the Edition of the Kitāb al-Nafs ascribed to Isḥāq ibn Ḥunayn," Journal of the Royal Asiatic Society (1956), p. 57; Malcolm C. Lyons, "An Arabic Translation of the Commentary of Themistius," Bulletin of the School of Oriental and African Studies, University of London, XVII (1955), pp. 426-427; Samuel M. Stern, "Ibn al-Samḥ," The Journal of the Royal Asiatic Society, (1956), pp. 31-44.

Works attributed to Alexander of Aphrodisias were translated into Syriac and Arabic by Hunayn, his son Ishaq, and others connected with the Baghdadi school. Two examples are the Perì Noû and the three propositions of Stoicheíōsis Theologikē of Proclus.[8]

Logic. Studies of the development of logic during the first centuries of Islam are interconnected with the results of the translations of Greek philosophical texts which took place during the same period of Islamic history. Professor Nicholas Rescher of the University of Pittsburgh presented four stages in the course of tracing logic developments in the ninth century, the first century that Arab-Islamic civilization was introduced to Greek works of logic. The first stage included the period in which Nestorians prepared Syriac translations of the Aristotelian Organon, consisting of Porphyry's Isagoge, the Categories (Categoriae), Hermeneutics, (De Interpretatione), Analytics (Analytica Priora), Apodictics. The first Syriac translations "tended to be rather crude word-by-word transpositions, interlaced with transliterated Greek terms" not yielding an Arabic text

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[8] J. Finnegan, "Texte arabe du Peri Nou d'Alexander d'Aphrodise," Mélanges de L'Université Saint Joseph, XXXIII (1956), p. 159; S. Pines, "Une Version arabe de trois propositions de la Stoicheíōsis Theologikē de Proclus," Oriens, VIII (1955), p. 195.

which was smooth and intelligible.[9] The second developmental stage was composed of translation revision done mainly by Hunayn and his son Ishaq from 835-890. The father and son used a method consisting of reverting back to the original Greek text, preparing a fresh Syriac revision from the original source or from a revision of the older translation. The third stage in the development of Arabic logic occurred when Hunayn's school made Syriac versions of Greek commentaries in logic, besides preparing other aids which had been used by the Nestorians in their scholarly academies in Mesopotamia and Persia. The last stage, of less concern to the purpose of the thesis took place by Muslim scholar-logicians digesting the previously translated corpus. The first real Muslim students of logic, for example al-Kindi and Thabit ibn Qurra (a student of Hunayn ibn Ishaq) independently produced studies and epitomes of logical texts in the Arabic language.[10]

Professor Rescher concludes his discussion of the first transmission of Greek logic to the Arab world, by saying that by the end of the ninth century A.D. "all of the Hellenistic/Syriac Aristotelian Organon save Anal. Post /sic/

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[9] Nicholas Rescher, The Development of Arabic Logic (/Pittsburgh, Pennsylvania:/ University of Pittsburgh Press, 1964), pp. 29 and 31.

[10] Ibid., pp. 31-32.

and the Poetica" were available in Arabic.[11]

The legacy of Greek thought to early Arab civilization became a debt to Muslim philosophers, logicians, and theologians whose sources for academic writings were based solely upon works of later Greek schools, which existed over half a millennium before Islam. Arabic versions of certain Galenic philosophical treatises, pre-Socratic writings, Aristotelian dialogues, certain works of Plotinus, Plato, and early to middle Stoic writers do not exist. Hence, some of these lost writings still remain undiscovered. The most popular of Greek philosophical thinkers to the Arabs were Aristotle and his commentators.[12] Therefore, it was the translated texts of the Aristotelian corpus which gave content to later works of Arab philosophers like al-Kindi, al-Farabi, and Ibn Rushd.

The most recent compilation of Greek philosophical works transmitted to the Arabs and evident first in Arabic translation is Roger Paret's work. The reader, if at all possible, should consult this exhaustive list, annotated in prose form.[13]

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[11] Ibid.

[12] Richard Walzer, "Islamic Philosophy," Greek into Arabic: Essays on Islamic Philosophy (Oriental Studies, Vol. I. Cambridge, Massachusetts: Harvard University Press, 1962), p. 5.

[13] Roger Paret, "Notes bibliographiques sur quelques travaux récents consacrés aux premières traductions arabes d'oeuvres grecques," Byzantion, XXIX-XXX (1959-1960), pp. 387-446.

II. MEDICINE

The bulk of the Greek medical texts transmitted to early Arab civilization consisted of works of Galen and Hippocrates, which constructed the framework for Arab medicine.[14] Other writers of Greek medicine were Paul of Aegina, Oribasius, Dioscurides, Severus, Rufus of Ephesus, John Philoponus, Theomnestus, and others of lesser importance.[15]

Two reasons why the translations of such a large body of Greek medical works took place were because of the medical qualifications of the translators (most were Nestorian doctors) and patrons, many of whom were medical practitioners. The specific interest of each group lay in the acquisition of more medical knowledge, and this interest led to the advantageous acquisition of medical materials, in the Byzantine Empire, Alexandria, and in other regions bordering the eastern Mediterranean.

Comment upon the transmission of Galenic and Hippocratic works would entail a separate thesis, so only

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[14] Malcolm C. Lyons, "The Relations between Greek and Arabic Philosophy and Science," op. cit., p. 66.

[15] Sa'di, op. cit., p. 434; Lucien Leclerc, Histoire de la médecine arabe, Vol. I (Burt Franklin Research & Source Works Series, No. 18. New York: Burt Franklin [c1876, 1960]), pp. 231-258.

general reference to the works is mentioned.[16]

Hunayn ibn Ishaq translated nearly the entire literary output of Galen from Greek into Syriac and Arabic. He listed the Galenic works in his Risalat. In his list he said that he put ninety-five books of Galen into Syriac and thirty-nine books into Arabic. His pupils translated six Syriac and seventy Arabic versions, most of which Hunayn revised. Earlier Syriac versions of Galen had been made by Hunayn's predecessors.[17] According to al-Fihrist Hunayn's method proceeded by his translating the Greek into Syriac; his nephew Hubaish translated the Syriac into Arabic, Hunayn then revised his nephew's work.[18]

The majority of Hippocrates' works were translated

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[16]For a detailed listing and commentary upon Galenic and other medical translations vide the following bibliographic items: Sa'di, op. cit., pp. 428-434; Leclerc, loc. cit.; Gotthelf Bergsträsser, Ḥunain ibn Isḥāq über die syrischen und arabischen Galen-Übersetzungen (Abhandlungen fur die Kunde des Morgenlandes, Vol. XVII, No. 2. Leipzig: /Deutsche Morgenländischen Gesellschaft/ in Kommission bei F. A. Brockhaus, 1925); _____, Neue Materialien zu Ḥunain ibn Isḥāq's Galen-Bibliographie (Abhandlungen fur die Kunde des Morgenlandes, Vol. XIX, No. 2. Leipzig: Deutsche Morgenländische Gesellschaft in Kommission bei F. A. Brockhaus, 1932), pp. 1-98: Max Meyerhof, "New Light on Ḥunain ibn Isḥâq," Isis, VIII (1926), pp. 690-702.

[17]Max Meyerhof, The Book of the Ten Treatises on the Eye Ascribed to Ḥunain ibn Isḥāq (809-877 A.D.): The Earliest Existing Systematic Text-Book of Ophthalmology (Cairo: Government Press, 1928), p. xxiii.

[18]Ibid., p. xxiv, citing E. G. Browne, Arabian Medicine, p. 26.

into Syriac by Hunayn ibn Ishaq; some he also put into Arabic, and a few into both. His Baghdadi translators worked on the Oath, translating it into Syriac and Arabic.[19] The original Greek was attributed to Galen in a commentary on Hippocrates, however, Galen's authorship remains unproved.[20]

Other miscellaneous medical translations of Hunayn's school were books by Oribasius (Synopsis, Book to His Father, Eunapius), Paul of Aegina (Pandectes), Rufus of Ephesus (Hygiene), Theomnestus (Veterinary Medicine and Surgery) Dioscurides (Materia Medica) and others.[21] The sources used by modern scholars in preparing lists of the writings of the above classical authors were Hunayn's Risalat (primary source) and al-Fihrist.

III. ASTRONOMY, MATHEMATICS, AND ASTROLOGY

Where the translation corpus of Greek philosophical and medical works had been chiefly the concern of industrious scholars centering around Hunayn ibn Ishaq, his son Ishaq,

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[19] Ibid., p. xxvi; Sa'di, op. cit., pp. 425-428.

[20] Franz Rosenthal, "An Ancient Commentary on the Ippocratic Oath," Bulletin of the History of Medicine, XXX (1956), pp. 52-86; Malcolm C. Lyons, Galeni in Hippocratis de officina medici commentariorum (Corpus medicorum Graecorum. Supplementum orientale, No. 1. Berolini: In aedibus Academiae Scientiarum, 1963), p. 5.

[21] Meyerhof, The Book of the Ten Treatises.... loc. cit.; Sa'di, op. cit., p. 434.

and nephew Hubaish, the Greek corpus of astronomical and mathematical translations was the interest of two other men, one related to Hunayn's school and the other living at a later time.

The tradition of studying the stars and their measurement had been a Middle Eastern custom long before the advent of Islam in the seventh century A.D. One group of Middle Eastern people who studied astronomy was the Sabeans or pseudo-Sabeans, not to be confused with the Christian Sabeans (Mandeans) in Babylonia who had attained dhimmi protection under the Muslim caliphate. The pseudo-Sabeans, henceforth called Sabeans in this thesis, took the name of the Mandean Sabeans in order to gain Islamic dhimmi status, too.[22]

The Sabeans were a pagan group of star-worshippers, whose center of activity was Harran in Mesopotamia. Their religion required them to investigate as much about the heavens and stars as possible. Since astronomy required the knowledge of mathematics, the two fields developed together, one giving impetus to the growth of the other.

Prior to Hunayn's school at Baghdad, translating work had been done by Harranians in the early eighth century. Such works were the Elements of Euclid and

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[22] Hitti, op. cit., pp. 357-358.

Ptolemy's Almagest. At a later date Hunayn and his successors revised the work of the Harranians.[23]

The most renowned Sabean translator was Thabit ibn Qurra (A.D. 836-901), whose life is discussed in Chapter IV.[24] He was a contemporary of Hunayn and worked on the translations from the Greek and Syriac into Arabic by Apollonius, Archimedes, Autolycus, Nicomachus, Pappus, Ptolemy, Euclid and others.[25] Thabit not only translated the astronomical, mathematical, and mechanical texts of the Greeks, but he also wrote original treatises in those fields, using the knowledge passed to him from the Greeks, and contributing greatly to the development of Arab astronomy. His relationship with Hunayn and the caliphs is explained in Chapter IV.

Not only the Sabeans were transmitters of the Greek mathematical and astronomical tradition to the Arabs, but Persians and scholars of the Jewish tradition acted in the same role. The field of astrology seemed to interest the Persians more than astronomy: this may have been due to their having closer contact with India. Astrological

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[23] Ibid., pp. 314-315.

[24] Ibid.

[25] Baron Carra de Vaux, "Astronomy and Mathematics," The Legacy of Islam, Thomas Arnold and Alfred Guillaume, editors (Cambridge, England: Clarendon Press, 1931), pp. 386-387; Leclerc, op. cit., 171-172.

treatises appeared popular in the Islamic world at a later time than did treatises on astronomy. Sources confirm the discovery of early Arabic astrological works made from translations of middle-Persian adaptations from Greek treatises.[26] Jewish translators also worked with Greek astrological and astronomical treatises, evident in the Abbasid Caliphate at a later date than the time of the height of the Baghdadi school. One source cited Aratus' Phaenomena, which was said to have been translated in the 900's. Whether the translator was of either Jewish or Persian origin is still in scholarly debate, but the fact remains that whoever the translator was, that person knew astronomy.[27]

Greek works dealing with astronomy and mathematics continued to be translated into Syriac and Arabic after the peak of Hunayn's school. The man most responsible for the translations was Qusta ibn Luqa (820-922 A.D.),[28] a Christian of Baalbek, whose biography is given in detail in Chapter IV. Qusta ibn Luqa was called to Baghdad to translate Greek works into Arabic, and at the same time revise other translations from the Greek in the fields in which he was educated; those being medicine, philosophy, astrology,

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[26] Kramers, op. cit., pp. 123-124.

[27] Ernest Honigmann, "The Arabic Translation of Aratus' Phaenomena," Isis, 41 (1950), pp. 30-31.

[28] Ronart, op. cit., p. 224.

mathematics, and astronomy.[29] He translated works of Archimedes, Aristarch of Samos, Autolycus, Diophantes, Euclid, Hypsicles, and Theodosius, and Hero of Alexandria, besides other Greek scientific works.[30]

Other works of Greek astronomers and mathematicians translated during the ninth century by Hunayn's school and his successors were Menelaus, Theon of Alexandria, Hipparch, and Eutocius.[31]

IV. THE ARTS AND OTHER SCIENCES

In the fields of historiography, music, oneirocritics, and gnomics Greek knowledge was transmitted to the Arabs. In the scientific fields of physics, botany, cartography, pharmacy, alchemy, metallurgy, zoology, and agriculture the same transmission occurred. However, the corpus of Hellenic tradition transmitted was not as large as the body of knowledge passed in philosophy, mathematics, medicine, logic, etc.

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[29] Giuseppe Gabrieli, "Nota biobibliografica su Qustā ibn Lūqā," Rendiconti della Reale Accademia dei Lincei, Classe di scienze morali, storiche e filologiche, Ser. V, XXI (1912), p. 361.

[30] Ibid., pp. 344-362; Leclerc, op. cit., pp. 158-159, 222, 225-226, 228-229.

[31] Heinrich Suter, Die Araber als Vermittler der Wissenschaften in deren Übergang vom Orient in den Okzident (second edition; Aarau: H. R. Sauerländer & Co., 1897), p. 9; Leclerc, op. cit., pp. 226-230.

Historiography. Two samples of ninth century historiography among the Arabs prepared by Hunayn ibn Ishaq and Qusta ibn Luqa were not extant in the twentieth century. Had the two specimens been in existence, modern historians could probably have seen a very marked resemblance to annalistic arrangement of Greek and Syriac historiography. Only meagre examples existed supporting the suggested hypothesis that Muslim historiography took its annalistic arrangement from the Greeks and Syriac-speaking Christians.[32]

Music. The Arab character and evolution of music remained less affected by foreign influences, than did the previously listed fields of study. By the time of Harun al-Rashid, a rich terminology of music technique in Arabic had been established for a long time. Some influences from Byzantium and Persia began to permeate Arab music theory. The former consisted of ninth century translations of Aristoxenes, Euclid, Ptolemy, Nicomachus, Plato (Timaeus), and some writings of Aristotle. Hunayn and one of his predecessors, Yuhanna ibn al-Batriq, translated most of the Greek texts on the science of melodious and rhythmic sound into Arabic.[33]

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[32] Franz Rosenthal, A History of Muslim Historiography (Leiden: E. J. Brill, 1952), pp. 68-69.

[33] H. G. Farmer, "Music," The Legacy of Islam, op. cit., pp. 363-364; Kramers, op. cit., p. 124; Lyons, "The Relations Between Greek and Arabic Philosophy and Science," op. cit., p. 65.

Oneirocritics. The writings of Artemidorus of Ephesus on the interpretation of dreams was translated from Greek into Arabic by Hunayn ibn Ishaq. The five volume work later inspired Abu Said Nasr B. Ya'qub al-Dinwari to write on oneirocritics in the eleventh century, besides causing other expansions and developments of Arabic literature dealing with the interpretation of dreams.[34]

Gnomics. Translations of gnomic works of Greek poets, actually attributed to Homer, were said to have been done by Hunayn ibn Ishaq. Evidence showed that three other gnomic works were translated during the next three centuries after Hunayn.[35]

Physics and mechanics. The works of Menelaus (Spherica), Archimedes (Sphere and Cylinder), and Autolycus (Revolving Sphere) were translated during the ninth century previously mentioned under Astronomy, Mathematics, and Astrology).[36]

Remaining sciences. Greek works in the fields of

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[34] T. Fahd, "La Traduction arabe de L'Oneirocritica d'Artémidore d'Éphèse," Arabica: Revue d'études arabes, VII (1960), pp. 88-89; Sa'di, op. cit., p. 424.

[35] Francesco Gabrieli, "Estudios recientes sobre la traduction griega en la civilización musulmana," op. cit., p. 299.

[36] Sa'di, loc. cit.

natural science, pharmacy, alchemy, metallurgy, botany, zoology and agriculture were translated into Arabic. For example, Aristotelian works (On Animals and On Plants, Parva Naturalis, On the Cosmos), a text by Theophrastus, and Greek works on alchemy (the word itself coming from Greek-Arabic root parts coming from Sassanian Persia, were translated into Arabic.) Qusta ibn Luqa translated Greek treatises on agriculture into Arabic.[37] Syriac translations included a version by the Byzantine, Cassianus Bassus, on husbandry.[38]

In searching for primary sources the only authentic one was Hunayn's Risalat listing Galenic works he translated. Al-Fihrist, Ibn Abi Usaibi'a, and al-Qifti, all secondary sources, mentioned the majority of previously listed Greek works.

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[37]Lyons, "The Relations Between Greek and Arabic Philosophy and Science," op. cit., p. 66; Max Meyerhof, "Science and Medicine," in The Legacy of Islam, op. cit., p. 314; Kramers, op. cit., pp. 111 and 118; Leclerc, op. cit., pp. 269-270.

[38]Meyerhof, "Science and Medicine," in The Legacy of Islam, op. cit., p. 321.

CHAPTER IV

SYRIAC AND ARABIC TRANSLATING BODIES UNTIL THE ELEVENTH CENTURY

The bodies responsible for translating the Greek texts and manuscripts into Syriac and Arabic have been separated into three groups by modern scholars of medieval Arab history and culture.[1] One such grouping only contained translators of the Abbasid caliphal period classed by: (1) the first translators working under the Abbasid caliphs al-Ma'mun (A.D. 813-833) and al-Mu'tasim (A.D. 833-842); (2) Hunayn ibn Ishaq (d. after A.D. 870), his colleagues and pupils in Baghdad; and (3) the Baghdadi school, not knowledgeable of Greek, which translated mostly into Syriac in the tenth and eleventh centuries.[2]

For the purpose of Chapter IV, the development of Syriac and Arabic translating bodies during early Arab civilization, the writer adopted classes (2) and (3) of the

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[1] Richard R. Walzer, "Arabic Philosophy," loc. cit.; Walzer, "Islamic Philosophy," op. cit., pp. 6-7; Soheil M. Afnan, Philosophical Terminology in Arabic and Persian (Leiden: E. J. Brill, 1964), p. 23. Laignel-Lavastine, "Le Rôle de l'hérésie de Nestorius dans les relations médicales entre l'orient et l'occident, Archives internationales d'histoire des sciences, XXX (1951), p. 69.

[2] Walzer, "Arabic Philosophy," loc. cit.; Walzer, "Islamic Philosophy," loc. cit.

divisions used by Richard Walzer of Oxford. However, class (1) was expanded to include the translators of Greek texts into Syriac and Arabic from the first years of the Umayyad Caliphate to the Abbasid Caliph al-Mu'tasim.

For reasons of expediency three compound terms were employed to denote the three classes: The "pre-Hunayn" school to indicate Class One; Hunayn's school applied to Class Two; and "post-Hunayn" school used for Class Three.

Chapter IV is organized into four sections; an introduction mentioning the pre-Islamic Syriac translators of the Greek tradition and the three major classes of Syriac/Arabic translators in the Islamic Empire. Under each section special attention is given to the most outstanding and well-known contributors to the mass of Syriac/Arabic translating.

I. THE PRE-ISLAMIC SYRIAC TRANSLATORS

Persian, Mesopotamian, and Syrian influences marked the major multi-cultural atmosphere from the beginning of the Christian era to the advent of Islam in the lands around the Tigris and Euphrates. No Arabic translations existed at this time as the Jahiliyah period,[3] the era of darkness, still enshrouded the Arabian Peninsula. Greek translations

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[3]Literal meaning for Jāhilīyah is the time of ignorance, from the Arabic root "ignore."

into Persian were going on during pre-Islamic days in the vicinities of Edessa, Nisibis, and Junde-Sapur in the Sassanian Empire.[4] Both Persian and Pahlawi translations have been ignored in this study.

The first known translators of Greek into Syriac lived during the fifth century A.D., and were Nestorians who worked mostly on mathematical and medical texts. Of the earliest period only two men stand out whose works were known.

Probus and Ibas (Prob(h)a in Syriac) reached his greatest activity in the mid-400's at Antioch by commenting on Aristotle and Porphyry.[5] Ibas of Edessa (d. 457 A.D.), a contemporary of Probus, was reported to have translated the Isagoge into Syriac, yet this is unproved.[6] Two other fifth century translators were Cumas and Barsuma. Little has been uncovered about the former, the latter, named in Syriac Barsauma, lived ca. 434/5-491/496 A.D. and was the Nestorian

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[4]Professor Nakosteen lists Persian translators, many of whom were Nestorian in Mehdi Nakosteen, History of Islamic Origins of Western Education A.D. 800-1350 with an Introduction to Medieval Muslim Education (Boulder, Colorado: University of Colorado Press, 1964), p. 24.

[5]George Sarton, op. cit., p. 382; Anton Baumstark, Geschichte der syrischen Literatur, op. cit., p. 102. Laignel-Lavastine, "Le Rôle de l'hérésie de Nestorius dans les relations médicales entre l'orient et l'occident," op. cit., p. 68; Gerhard Klinge, "Die Bedeutung der syrischen Theologen als Vermittler der griechischen Philosophie an dem Islam," Zeitschrift fur Kirchengeschichte, 58 (1939), p. 355.

[6]Sarton, op. cit., p. 407; Laignel-Lavastine, loc. cit.

Bishop of Nisibis. Little is known of his translations.[7]

Sergius of Resh-Aina. Sergius of Resh-Aina (d. 536), (Sargis Ris'aina in Syriac) began the great tradition of Syriac translators working on Greek medical literature.[8] Until the mid-sixth century, most translations from Greek into Syriac were done by Nestorians. Sergius came to be the first renowned Jacobite translator, as well as the first translator to put "Greek medical works into an oriental language."[9] His works included translations of Plutarch, Themistius, the pseudo-Dionysius Areopagite, Aristotle (Categoriae), Prophyry (Isagoge), and according to Hunayn's Risalat, twenty-six books of Galen. Only fragments of his medical translations are extant. Scholars conclude that the calibre of his work was mediocre, compared to his successor Hunayn, who revised many of Sergius' translations.[10]

Beginning in the fifth and sixth centuries Zoroastrian scholars, converts to Christianity, continued Syriac

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[7] Ibid., p. 65; Baumstark, Geschichte der syrischen Literatur, op. cit., p. 108.

[8] Meyerhof, "Science and Medicine," op. cit., p. 314; Baumstark, op. cit., p. 167.

[9] Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 703.

[10] Ibid.; Klinge, op. cit., p. 356; Wright, op. cit., pp. 88-90; Laignel-Lavastine, op. cit., p. 69; Baumstark, Geschichte der syrischen Literatur, op. cit., pp. 167-168.

translations of Greek science and philosophy in Syria and the Sassanian Empire, especially at the school of Edessa. One such Christian convert was Mar Abha I; another was Paul of Nisibis, the writer of a book in Syriac on Aristotelian logic.[11] A third Zoroastrian, named Ibn al-Muqaffa, who converted to Islam, translated parts of the Aristotelian Organon from Greek into Arabic. He was also known for translating Middle Persian texts into Arabic, one of which was the Sanskrit classic, The Fables of Bidpai (Kalilah wa Dimnah). In 757 he was murdered due to his religious beliefs. Ibn al-Muqaffa was best remembered for his translations into Arabic of the logic of Aristotle. Al-Fihrist, Ibn Abi Usaibi'a, al-Qifti, al-Jahiz, and others supported his work on Aristotle.[12] Ibn al-Muqaffa lived in the latter days of the Umayyads. He has been brought into the pre-Islamic category, only because his early Zoroastrian background, which linked him to an ancient religious faith, unconnected with Judeaic, Christian, or Muslim origins.

Paul of Aegina and Severus Sebokt. In the mid-seventh century the works of Paul of Aegina, a Jacobite, flourished transmitting Greek medical tradition to Syriac scholars and

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[11] Nakosteen, op. cit., p. 23.

[12] Hitti, op. cit., pp. 308, 359 and 401; Afnan, op. cit., pp. 15-18.

translators, continuing the work of his Jacobite predecessor, John the Grammarian,[13] who lived one century earlier. A third Jacobite, Severus Sebokt (in Syriac Severus Seb(h)ok(h)t), d. 666/667 A.D., a great Syriac scholar, wrote a commentary on Aristotle's Hermeneutics, besides studying other works of Aristotle and transmitting knowledge of Syrian astronomy.[14]

The year A.D. 661 (A.H. 40) is the year generally stated as being the beginning of Umayyad rule for the Arab caliphs in Damascus.[15]

II. THE PRE-HUNAYN TRANSLATORS

The pre-Hunayn period was classed into three sections: The first comprising the work of John of Damascus into Syriac and Arabic, near the Umayyad capital; the second consisting of Syriac and a few Arabic translations by Jacobites made in Syro-Persian centers, e.g., Junde-Sapur, Edessa; and the third period composed of translations in Arabic and Syriac made mostly by Nestorian scholars directly under Abbasid control.

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[13] Ibid., p. 206; Hitti, op. cit., p. 311.

[14] Baumstark, Geschichte der syrischen Literatur, op. cit., pp. 246-247; Nakosteen, loc. cit.

Landau, op. cit., p. 58; Hitti, op. cit., p. 189.

John of Damascus. The contribution of St. John of Damascus to the transmission of Greek thought to early Arab civilization must be evaluated in the light of the religiously tolerant atmosphere of the early eighth century. Christians at that time in Damascus, and there were many, viewed their Muslim conquerors not as theocrats, but as plain politicians, whose religious conviction seemed rather vague.[16] Even the name the Christians gave the Muslims reflected an ethnic origin, rather than a religious one. For example, the followers of the Prophet Muhammad were called "Hagarians" and "Ishmaelites," both terms referring to Hagar and Ishmael, the legendary progenitors of the Arabs.[17] John's and his family's relations with the early Umayyad caliphs were quite congenial, as was previously mentioned in Chapter II. The Umayyads held them in such high esteem that they even gave John's family the Arabic name Mansur.[18]

In the second decade of the eighth century, due to hardening of the caliphal attitude towards Christians, John

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[16] T. H. Weir, "Muhammadanism (in Syria, Egypt, and Mesopotamia)," Encyclopaedia of Religion and Ethics, ed. James Hastings (New York: C. Scribners, 1916), VIII, p. 899b.

[17] D. S. Margoliouth and A. Mingana, "Qur'an," Encyclopaedia of Religion and Ethics, op. cit., X, p. 549a.

[18] F. Kattenbush, "John of Damascus," The New Schaff-Herzog Encyclopedia of Religious Knowledge, ed. S. M. Jackson (New York, Funk & Wagnalls, 1910), VI, p. 208.

left public life to retire to a monastery near Jerusalem where he began varied writings on philosophy (his Dialectica which used Platonic and Aristotelian thought), heresies to orthodox Christianity (in which he refused Nestorians, Monophysites [Jacobites], and Muslims), and Christian orthodoxy (De Fide Orthodoxa).[19]

Due to John's access to certain philosophical works of Plato and Aristotle, Arabs took his writings in Greek, Syriac, and Arabic, in which Syriac terminology was present, enriched by borrowed and adapted Greek words. The Arabs then adopted the same borrowing through an analogous system, derived from the expression of abstract ideas.[20] With the continual reception of Greek ideas over one and a half centuries, the Arabs synthesized the Hellenic cultural accumulation, producing a new civilized society, not purely Arab in character, possessing Greek, Persian, and Indian traits.

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[19] Cross, op. cit., p. 735; I. Ortiz de Urbina, "Giovanni Damasceno," Enciclopedia filosofica (Venezia: Istituto per la Collaborazione Culture, 1957), II, p. 758a; Joseph H. Lupton, "Joannes Damascenus," A Dictionary of Christian Biography, Literature, Sects, and Doctrines.... eds. William Smith & H. Wace (London: J. Murray, 1882), III, p. 411; Maurizio Gordillo, "Giovanni Damasceno, santo," Enciclopedia cattolica (Città del Vaticano: Ente per l'Enciclopedia Cattolica e per il Libro Cattolico, 1951), VI, columns 547 and 549.

[20] Félix Nève, "Saint Jean de Damas et son influence en orient sous le premiers khalifs," Revue belge et étrangère, XII(1861), pp. 128, 131-134.

Athanusuis of Baladh. A contemporary of John of Damascus was Athasasius of Baladh (d. 686 A.D.) (in Syriac Athanasios II of Balad'h), Jacobite pupil of Severus Sebokt. Athanasius translated the Greek texts of Porphyry's Isagoge and other works of Aristotelian logic into Syriac.[21]

George, Bishop to the Arabs. A pupil of Athanasius II was George, Bishop of the Arab tribes, whose jurisdiction was in Syria-Mesopotamia, from 686-724 A.D.[22] He translated Aristotle's Categories and first book of Analytics into Syriac.[23]

With the eighth century came an increasing number of Nestorian translators, who until the late 600's were outnumbered by Jacobite ecclesiastics who were translators.

Henan-Isho I. One of the first Nestorians to prepare a Greek translation about Aristotle was Henan-Isho (in Syriac Henaniso I), died in 699/700 A.D. His Aristotelian work was a commentary on the Analytics.[24]

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[21] Wright, op. cit., pp. 154-155; Baumstark, op. cit., pp. 256-257; Max Meyerhof, "La Fin de l'École d'Alexandrie d'aprés quelques auteurs arabes," Archeion: Archivio de storia della scienza, XV (1933), p. 13.

[22] Baumstark, Geschichte der syrischen Literatur, op. cit., p. 257.

[23] Wright, op. cit., pp. 156-157.

[24] Wright, op. cit., pp. 181-182; Baumstark, Geschichte der syrischen Literatur, op. cit., p. 209.

After Henan-Isho I, the beginning of the translator-physicians professing the Nestorian faith commenced in Syro-Persian centers of Nisibis, Junde-Sapor, and Edessa, where medical training as well as academic instruction in the Greek tradition took place. Not all the translators of the period immediately before Hunayn's school were Nestorians, but the majority of known translators were medical practitioners who followed the teachings of the latter.

As is evident, little patronage by the Umayyad caliphs or other patrons inside Damascus occurred in early Umayyad days. The only example brought into this thesis was that of St. John of Damascus, whose writings and translations hardly exemplify Umayyad patronage. During later Umayyad rule scholars from Junde-Sapur were brought to Damascus, most of whom were Jews and Nestorian Christians.[25]

With the collapse of the Umayyad Caliphate in Damascus and the rise of the followers of al-'Abbas in Baghdad, the eastern influence of Persia entered Arab-Muslim culture. Part of the Persian influence on Abbasid life came through the first translator-physicians of Junde-Sapur, brought to the Abbasid capital not only as court physicians, but as translators of Greek manuscripts as well. The linguistic education of the translators was varied, as most of them

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[25] Meyerhof, "Science and Medicine," op. cit., p. 314.

knew Greek, Syriac, Arabic, and Persian. Historians stated one of the causes of the collapse of the Abbasid Caliphate was the Persian character of worldliness, pleasure, and intrigue corrupting the comparatively moral, monolithic, and religious life of the Arab Muslim, who first resided in Mecca, then Medina, Damascus, and finally Baghdad. Yet, the Persian character of Abbasid life cannot all be evaluated negatively. Had it not been for the translators of the Sassanian Empire and vicinity, the Greek heritage, in all of the breadth and diversity of Hellenic culture, would have not been passed to early Arab civilization. By the time of Abbasid domination only a small portion of philosophy, logic, and medical writings had been transmitted to the Arabs. Translating activity in the early Middle Ages reached its height under the acme of Abbasid civilization which flourished in Baghdad. The accuracy and scholarly method which Hunayn ibn Ishaq and his colleagues achieved during the mid-ninth century was never duplicated again during medieval times. Even the later translating centers of Cordoba, Toledo, Salerno, and Palermo failed to reach the quantity of mss. production and to maintain the high academic level of poly-linguistic savants employed at the Bayt al-Hikmat and in the private patronage of Baghdadi philanthropists. Many of the modern scholars interested in the Baghdadi translating age cited numerous manuscripts translated under Abbasid patronage

of Nestorian physicians which by now have been lost or destroyed.[26]

Manuscript production during Abbasid rule accelerated also because of the introduction of manufactured paper[27] produced in Baghdad in A.D. 794.[28] The Arabs had learned of paper manufacture from captured Chinese in Samarqand. The production technique used was derived from a combination of relatively inexpensive flax and hemp cloth, reducing the cost of making a book from papyrus, vellum, or parchment.[29] Evidence of one hundred bookshops was reported to have existed in Baghdad in the ninth century. Further evidence showed that book collections were housed by the Caliph al-Mutawakkil and patron of the translators, 'Ali ibn Yahya al-Munajjim (888 A.D.).[30] Other famous residents of Baghdad housed book collections, which gave rise to private and public libraries,

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[26] Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., pp. 703, 705, and 711; Leclerc, op. cit., p. 173.

[27] Paper is called warrāq in Arabic.

[28] Meyerhof, "Science and Medicine," op. cit., p. 322.

[29] Bayard Dodge, Muslim Education in Medieval Times (Washington, D. C.: Middle East Institute, 1962), p. 14; Olga Pinto, "Le Biblioteche degli Arabi nell'età degli Abbassidi," La Bibliofilia: Rivista di storia del libro e delle arti grafiche, XXX (1928), p. 142.

[30] Pinto, op. cit., pp. 143-144.

bookshops, and the like.[31]

During the brief reign of the Caliph al-Saffah (A.D. 750-754), the first Abbasid ruler, no mention was made of the translating centers or the Syriac transmission of Greek knowledge. With the establishment of Baghdad during the days of al-Mansur (A.D. 754-775), translators were encouraged to bring Greek thought to Arab minds.

George Boktishu. In A.D. 765 George Boktishu, (in Syriac Giwargis ibn Bok(h)tiso) Nestorian physician and scholar of Junde-Sapor, was brought to Baghdad by al-Mansur as court physician. This was the beginning of the prominence of the Persian Nestorian family of physicians, Boktishu, attached to the Abbasid caliphs, the encouragers of medical research in the 700's and 800's.[32] Members of the Boktishu family for a long time had been directors of the celebrated school and hospital as Junde-Sapor. George had taught students at the clinical academic centers there before he came to the Abbasid capital. He had even been called the promoter of the scientific movement in the Orient. To him has been accredited the real beginning of the translating tradition of Nestorian physicians under the patronage of

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[31] Vide Pinto, op. cit., pp. 139-165 for study of Abbasid libraries.

[32] Sarton, op. cit., p. 537; Baumstark, Geschichte der syrischen Literatur, op. cit., p. 227.

Abbasid caliphs and learned men of Baghdad. His translations were from Greek into Arabic.[33] As pointed out in Chapter II, George did not translate works into Syriac for the Abbasid caliph proving the thesis that the Baghdadi scholars translated directly into Arabic for caliphal administrative patrons and into Syriac for their Nestorian colleagues and patrons.

Isa ibn Thakerbokht. One of George Bokhtishu's pupils and proteges at the medical center at Junde-Sapur was the Nestorian Isa ibn Thakerbokht, who succeeded his instructor as physician at the court of al-Mansur. His only known work whose relationship to a Greek text was not determined dealt with therapeutics.[34]

Theophilos of Edessa. Under the Caliph al-Mahdi (A.D. 775-785), Theophilos of Edessa (in Syriac Thiyufil bar Thuma /Theophilos, son of Thomas/ d. 785) served as court astrologer. Theophilos, not in the long line of Nestorian translators, but of the Maronite sect of Christianity, translated the entire Iliad and Odyssey into Syriac, as well as a work of Aristotle into Arabic. One work of Galen's, De Tuenda Sanitate, is known to have been translated by Theophilos. In working with the Syriac translations, he

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[33] Laignel-Lavastine, op. cit., pp. 65-66.

[34] Ibid., Nakosteen, op. cit., p. 206.

used Greek voweling of Syriac words, making the Hellenic vowel points of the Syriac language more common. Hunayn said of him that he was a poor translator.[35]

Under the rule of Harun al-Rashid, Baghdad became the thriving center in the Mediterranean area for cultural intercourse. One reason for this was Harun's Persian wazir, Ja'far ibn Barmak, to whom was accredited collecting Greek manuscripts located in the Roman Empire, bringing them to Junde-Sapur and Baghdad to be translated into Syriac and Arabic. Under Harun al-Rashid Greek scientific material really began to be translated; first, astronomical and mathematical works of Hellenic writers were translated, then medical works followed.[36] Under Harun, Gabriel Bokhtishu continued his family's traditional profession, becoming the court physician to the caliph.

Gabriel Bokhtishu. As will be mentioned in Chapter V, Gabriel, son of George Bokhtishu, was a patron of the translators, particularly charged with encouraging Hunayn ibn Ishaq to become a translator.[37] Gabriel, though not

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[35] Baumstark, Geschichte der syrischen Literatur, op. cit., p. 341; Wright, op. cit., pp. 163-164; Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 704.

[36] De Lacy O'Leary, How Greek Science Passed to the Arabs (London: Routledge & Kegan Paul Ltd., 1957), p. 160.

[37] Vide p. 17, Chapter V of thesis.

serving as a real translator, prepared a medical manual by using both Syriac and Arabic, based upon earlier translations of Galen, Paul of Aegina, and Dioscorides.[38]

Ayyub al-Ruhawi al-Abrash. Information concerning Ayyub was incomplete. Hunayn mentioned him in his Risalat stating that Ayyub (known as Job of Edessa, or Job, the Spotted) produced thiry-five Galenic works in Syriac, however, the quality of Ayyub's work was poor. Hunayn himself revised and corrected much of Ayyub's Galenic versions.[39]

Ibn Shahda or Shamli. Hunayn's Risalat listed two men, who may have been both the same person because of faulty transcription of early copyists in spelling names. Assuming they are both one and the same person, Ibn Shahda or Shamli produced mostly Galenic versions in Syriac and Arabic sometime in the beginning of the 800's in Baghdad. He is also attributed with translating the works of Hippocrates into Arabic.[40]

Al-Haggag ibn Yuhanna ibn Mater al-Hasib al-Warraq.

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[38] Baumstark, Geschichte der syrischen Literatur, op. cit., p. 227; Nakosteen, op. cit., pp. 206-207.

[39] Meyerhof, "New Light on Ḥunain ibn Isḥâq," loc. cit.

[40] Ibid.

Little is known of al-Haggag, who worked during Harun's days except that he translated Euclid's Elements and Ptolemy's Almagest into Arabic, being commissioned by Yahya ibn Khalid, Barmakid wazir of the caliph.[41]

With the death of Harun al-Rashid and the weak caliphal rule of al-Amin (A.D. 809-813, A.H. 193-198), no information regarding translators or their patrons could be found.[42] Contemporary with the rule of al-Amin was the birth of the most illustrious translator of the Abbasid Caliphate, Hunayn ibn Ishaq al-Ibadi, in Hira (Iraq) in A.D. 809 A.H. 194).[43]

The twenty-year administration of the Caliph al-Ma'mun (A.D. 813-833, A.H. 198-218)[44] contained many components of cultural accomplishment including patronage of translators. Ma'mun directly saw to it that the famous Bayt al-Hikmat was established in Baghdad around the year A.D. 830.[45] Before its

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[41]Heinrich Suter, Die Araber als Vermittler der Wissenschaften in deren Übergang von Orient in den Okzident, op. cit., p. 2.

[42]Hitti, op. cit., p. 297; Meyerhof, "New Light on Ḥunain ibn Isḥâq, op. cit., p. 687.

[43]Carl Brockelmann, Geschichte der arabischen Litteratur, Zweite den Supplementbänden angepasste Auflage (Leiden: E. J. Brill, 1943), I, p. 224; Giuseppe Gabrieli, "Ḥunáyn ibn Isḥáq," Isis, VII (1924), p. 282; Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 687.

[44]Nakosteen, op. cit., p. 202.

[45]Meyerhof, "Science and Medicine," op. cit., p. 359.

establishment translators flourished, both sided by public officials and medical colleagues and patrons. A list of some of the translators follows.

Al-Bitriq and Yuhanna or Yahya ibn Bitriq. Two translators of the pre-Hunayn period were al-Bitriq and his son Yahya or Yuhanna as he was often called. The father served under both al-Mansur and al-Ma'mun: the latter, commissioned al-Bitriq to search for scientific books in Byzantium, and after retrieving them he translated the texts into Arabic. Unfortunately, facts concerning father and son were confused,and proper identification about their works is still being argued. Based upon Hunayn's Risalat and an article referring to al-Fihrist, al-Qifti, and Ibn Abi Usaibi'a, a conclusion could be made that al-Bitriq translated medical works of Galen and Hippocrates, besides Ptolemy's Quadripartitus. Yahya, his son, seemed to have worked mainly in the fields of philosophy, medicine, and pharmacy translating versions of Plato, Aristotle, Hippocrates, and Galen, as well as the Book of Poisons. Aristotle's spurious Politics was ascribed as translated by Yahya from ancient Greek to modern Greek or Latin. The biographies of the father and son still remain unsettled. From information regarding the three great thirteenth-century biographical sources, the writer concludes that al-Bitriq produced translations as early as

al-Mansur and as late as al-Ma'mun. Yahya flourished most probably during the time of the latter caliph.[46]

Yuhanna ibn Masawayh. One of the most renowned Nestorian physicians of Baghdad in the first half of the ninth century was Yuhanna or Yahya ibn Masawayh, pupil of Gabriel ibn Bokhtishu (A.D. 777-857).[47] Yuhanna was called the last great doctor of the Persian School of Medicine at Junde-Sapor. While in his fifties he was requested by the Caliph al-Ma'mun to go to Baghdad to direct the Bayt al-Hikmat sometime between A. D. 830-832.[48] His works remain a point of controversy among scholars. Until the 1930's historians of the development of Arab medicine believed that Yuhanna had served under Harun al-Rashid by translating Greek works into Arabic. But in 1933, Arab historians realized that the story was a legend, because proof was found that Yuhanna had known Arabic and Syriac, but at the same time had translated

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[46] D. M. Dunlop, "The Translations of al-Biṭrīq and Yaḥyā (Yūḥannā) b. al-Biṭrīq," Akten des Vierundzwanzigsten Internationalen Orientalisten-Kongress, München (Wiesbaden: Deutsche Morganländische Gesellschaft, 1957), pp. 303-305; Brockelmann, op. cit., p. 221; Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 705.

[47] Baumstark, Geschichte der syrischen Literatur, op. cit., pp. 258-259; Hitti, op. cit., p. 363.

[48] R. P. Paul Sbath, "Le Livre sur L'Eau d'Orge de Youhanna ben Massawaih grand savant et célèbre médecin chrétien mort en 857," Bulletin de l'Institut d'Égypte, XXI (1939), pp. 14-15; Hitti, op. cit., p. 310.

into Hebrew and Latin.[49] A question still remains to the Hebrew and Latin versions attributed to Yuhanna. His greatest significance to the history of early Arab civilization is that he was the teacher of Hunayn ibn Ishaq, instructing the latter in the technique and practice of medicine.[50]

'Abdalmasih b. Al. b. Na'ima al-Himsi. Few facts were known about this translator, who was reported to have worked for the Caliph al-Mu'tasim in A.D. 835 (A.H. 220).[51] The Arabic translation of a theological work of Aristotle has been attributed to him.[52]

In organizing the translators into feasible classes, the writer of this thesis has attempted to form four general groups of bodies who translated Greek texts into Syriac and Arabic. Actually there were no distinct chronological breaking points in the four classes, since the translating

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[49] Sbath, loc. cit.; Leclerc, op. cit., p. 110; R. P. Paul Sbath, "Le Livre des Temps d'Ibn Massawaih médecin chrétien célèbre décédé en 857," Bulletin de L'Institut d'Égypte, XV (1933), p. 235; Nakosteen, op. cit., p. 207.

[50] Sbath, "Le Livre des Temps d'Ibn Massawaih...," loc. cit.

[51] Brockelmann, Geschichte der arabischen Litteratur, Zweite den Supplementbänden angepasste Auflage, op. cit., p. 222.

[52] Baumstark, Geschichte der syrischen Literatur, op. cit., p. 230.

function of various bodies within the area of the Muslim Empire was continuously going on from the fourth century until the eleventh century. Cutting the fourth class off in the 1000's could have been criticized, yet after that millennium, few productive results in Syriac were evident. Only the figure of Bar-Hebraeus stood out in the thirteenth century as a writer of Syriac literature, much of which was derived from Greek through Syriac and Arabic sources. Yet, most of his works were in the form of commentaries, not translations.[53] Arabic translations continued at a dwindling pace after the final collapse of the Abbasids in the Middle East, and the trend of Arabic translations into Latin and Hebrew, completely ignoring the original Greek texts, became the vogue. Chapter VI deals with this subject.

In Richard Walzer's classes of translators, his first classification (the writer's second) ended with the Caliph al-Mu'tasim, who relinquished his rule to the Caliph al-Mutawakkil in A.D. 842 (A.H. 227).[54] With the reign of al-Mutawakkil in Baghdad, the focus of the thesis' study lights on the Nestorian physician and translator; Hunayn ibn Ishaq, his pupils and contemporaries.

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[53] Ibid., pp. 312-320.

[54] Brockelmann, loc. cit.

III. HUNAYN IBN ISHAQ AND HIS SCHOOL OF BAGHDADI TRANSLATORS

The nineteenth-century French Arabist Lucien Leclerc said that

> Hunayn "est la plus grande figure du IX^{e} siècle. On peut même dire qu'il est une des plus belles intelligences et un des plus beaux caractères que l'on rencontre dans l'histoire. La merveilleuse étendue de ses travaux, leur variété, leur supériorité et leur importance, les épreuves qu'il supporta noblement au début et dans le cours de sa carrière, tout chez lui provoque l'intérêt et la sympathie. S'il ne créa pas le mouvement de renaissance en Orient, personne d'y prit une part aussi active, aussi sûre et aussi féconde."[55]

Biography. Abu Zaid Hunayn ibn Ishaq al-Ibadi, the most illustrious translator of the Abbasids, was born in Hira (in Syriac, Hirta), Iraq in 809, to the family of a Nestorian apothecary.[56] Ibn Khallikan related in his Biographical Dictionary "al-Ibadi" to mean the members of a number of Christian (often denoting Nestorians) families settling in Hira. In Arabic ibadi was a form of the word to mean obedient, subjected in reference to being "obedient to the King of Persia." Hira, the name of an old Middle

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[55] Leclerc, op. cit., pp. 139-240. Many modern commentators on Hunayn have used portions of Lucien Leclerc's quote in their discussions of his life and works.

[56] Baumstark, Geschichte der syrischen Literatur, op. cit., pp. 228-229; Ibn Khallikān, Ibn Khallikān's Biographical Dictionary, trans. Bn. MacGuckin de Slane (New York: Johnson Reprint Corporation, c1842 /1961/), I, p. 478.

Eastern city, was in the process of ruin, and Kufa had been founded outside its boundaries in A.D. 638 (A.H. 17).[57]

Hunayn's early youth was spent at Junde-Sapor in Khuzestan in the presence of Yuhanna ibn Masawaih, the noted physician and translator, who instructed Hunayn in medicine, for a while becoming a member of Yuhanna's' "circle." A contemporary of Hunayn, Yusuf ibn Ibrahim (cited by Ibn Abi Usaibi'a), gave accounts of Hunayn's biography. In narrating the training period of Hunayn's life Yusuf stated: "I knew Hunayn as a translator. He used to read to Yuhannah [sic] a textbook on medicine entitled in both Greek and Syriac..."[58] Because of the Hirian's incessant and intelligent questions and curiosity, Yuhanna became annoyed and expelled his brilliant pupil from his circle of pupils and friends. Hunayn then traveled in the Byzantine sphere of influence to Alexandria where he learned Greek. Upon returning to the Arab world he went to Basra to perfect his Arabic from the master of the language at that time, Khalil ibn Ahmad, the writer of Kitab al-Ayn, the great Arabic dictionary.[59] Hunayn's linguistic abilities at that time were Syriac (the

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[57] Ibn Khallikān, op. cit., pp. 188-189.

[58] Sa'di, op. cit., pp. 410-411.

[59] Giuseppe Gabrieli, "Ḥunáyn ibn Isḥáq," op. cit., p. 282; Afnan, op. cit., p. 20, citing al-Qifṭī, p. 171.

language of his religion), Greek (learned at Alexandria), Arabic (the spoken language of the Arab world), and Persian (spoken and written in the Abbasid court). During the reign of al-Ma'mun, Hunayn's linguistic skill led him to the homes of famous Baghdadi physicians, who requested him to translate Greek and other texts for them.[60] Yusuf ibn Ibrahim narrated that even Hunayn's past teacher, Yuhanna ibn Masawaih, reclaimed Hunayn in his circle of scholarly acquaintances after hearing of his ex-student's translating accomplishments through Gabriel Bokhtishu, Apparently Hunayn had translated part of Galen's book on anatomy for Gabriel, who in turn had boasted of the Hirian's genius.[61]

Hunayn's reputation increased to such an extent that Gabriel recommended to the Caliph al-Ma'mun that Hunayn be appointed as translator at the Bayt al-Hikmat.[62] Whether or not Hunayn first replaced Yuhanna ibn Masawaih or assisted him at first at the Bayt al-Hikmat was unclear to determine from sources.[63] Hunayn administrated the Bayt al-Hikmat during the reigns of several Abbasid caliphs. In the

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[60] Ibid., p. 283.

[61] Sa'di, op. cit., pp. 411-412.

[62] Ibid.

[63] Ibid.; De Lacy O'Leary, How Greek Science Passed to the Arabs, op. cit., p. 166; Meyerhof, The Book of the Ten Treatises on the Eye, op. cit., p. XIX.

academy's library many Greek manuscripts were shelved, collected from the Byzantine Empire. While in his last years at the Bayt al-Hikmat, Gabriel patronized Hunayn's work until the former's death soon after the founding of the academy. Gabriel's son, Boktishu ibn Gabriel, continued in his father's footsteps patronizing Hunayn through the reigns of Caliph al-Mu'tasim and Caliph al-Wathiq. The Hirian wrote that during the time of his fortieth year he produced fourteen versions of Galen translating them from Greek to Syriac. Sources agreed that around the same time Hunayn was encouraged by al-Wathiq to produce books of many Greek medical and philosophical authors.[64]

Sometime during his career at the Bayt al-Hikmat, Hunayn made a search through Syria, Mesopotamia, Palestine, and Egypt looking for Greek manuscripts.[65] He was financed by the administration of the caliphate as well as private scholarly patrons, in particular, the Banu Musa, who according to Ibn Abi Usaibi'a paid 500 dinars (ca. $1000) per month for translations.[66]

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[64] Ibid., pp. XIX-XX; Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., pp. 717-718.

[65] Meyerhof, The Book of the Ten Treatises on the Eye, loc. cit.; Suter, Die Araber als Vermittler der Wissenschaften in deren Übergang vom Orient in den Okzident, op. cit., p. 3.

[66] Meyerhof, The Book of the Ten Treatises on the Eye, loc. cit.

De Lacy O'Leary stated that the Banu Musa were responsible for Hunayn's appointment at the Bayt al-Hikmat by al-Ma'mun. However, this point was not documented by the historian. Therefore, the means by which Hunayn became director of the academy remain unproved.[67]

Even during al-Mu'tasim's reign in 836 moving the Abbasid capital to Samarra where it functioned for fifty-six years, the work of the translators continued in Baghdad at the Bayt al-Hikmat under Hunayn, and upon his death, his son Ishaq and nephew Hubaish.[68]

Under the rule of al-Mutawakkil, Hunayn reached the peak of his translation work, yet paradoxically, he suffered the greatest hardship of his life at the same time. The fanatic caliph, upon demanding that Hunayn prepare poisons to kill caliphal enemies, was refused by the noted physician-translator, who in turn was jailed for one year. When Hunayn was brought before al-Mutawakkil for a hearing, the former said that his religion (Nestorian Christianity) and his profession (medicine) forbade his harming kindred or composing "mortiferous remedies." Because of his reasoning,

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[67] De Lacy O'Leary, How Greek Science Passed to the Arabs, loc. cit.

[68] Hitti, op. cit., p. 466; Max Meyerhof, "Les Versions syriaques et arabes des écrits galéniques," Byzantion, III (1926), p. 39.

the caliph forgave him.[69] A few years after, Hunayn was the victim of an intrigue contrived by either his past benefactor Boktishu, the son of Gabriel, or another Nestorian physician, Isra'il ibn Zakariyya al-Taifuri. Whichever man it was did not affect the harm done Hunayn to his freedom of movement and his personal property. One story of his ill-fate tells that he was victimized by jealous colleagues and co-religionists, who "denounced him to the caliph as a heretic."[70] Hunayn was imprisoned in the house of the Nestorian Catholicos of Baghdad.[71] For several months he was kept there, according to Hunayn's autobiography, which unfortunately is lost, the only clue to its existence being writings of Ibn Abi Usaibi'a. In the Risalat Hunayn stated:

> "I had lost all the books which I had gradually collected during the course of the whole of my adult life in all the lands in which I had travelled, all of which books I lost at one blow.' And in another passage he /said/ that his former friends deprived him of gold, silver, 'books and any scrap of paper to look at."[72]

Hunayn's enemies, upon the famous translator's

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[69] Meyerhof, The Book of the Ten Treatises on the Eye, op. cit., p. XXI; Laignel-Lavastine, op. cit., p. 71.

[70] Meyerhof, The Book of the Ten Treatises on the Eye, op. cit., pp. XX-XXI.

[71] _____, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 689.

[72] _____, The Book of the Ten Treatises on the Eye, op. cit., pp. XXI-XXII.

regaining caliphal favor, paid him 10,000 drachms to recompense their ill will. The leader of his opposition, Gabriel, lost favor with the caliph and was exiled to the sheikdom of Bahrein on the Persian Gulf for the rest of his life, dying there in 870.[73]

For the remaining two decades of his life, Hunayn applied his energies to translating activities, fortunately with no further mishappenings. The five succeeding caliphs after al-Mutawakkil, al-Muntasir (A.D. 861-862, A.H. 247-278), al-Musta'in (A.D. 862-866, A.H. 248-251?) al-Mu'tazz (A.H. 866-869, A.H. 251?-255), al-Muhtadi (A.H. 869-870, A.H. 255-256), al-Mu'tamid (A.H. 870-892, A.H. 256-279), all gladly patronized Hunayn and his school of translators.[74] The date of the death of Hunayn ibn Ishaq has not been proved.[75-77]

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[73] Ibid.

[74] Hitti, loc. cit.; Dominique Sourdel, Le Vizirat 'Abbāside de 749 à 936 (132 à 324 de l'hegire, Damas: Institut Français de Damas, 1960), II, pp. 726-727.

[75] Thirteenth-century sources gave two different dates. Al-Fihrist listed A.D. 873, while Ibn Abi Usaibi'a gave A.D. 877.

[76] A twentieth-century source listed A.D. 873, Brockelmann, Geschichte der arabischen Litteratur, Zweite den Supplementbänden angepasste Auflage, Vol. I (Leiden: E. J. Brill, 1943), p. 224.

[77] A recent contemporary western scholar of the life and works of Hunayn stated that the death of the diligent physician-translator still remains hidden in obscurity, Sa'di, op. cit., p. 415.

The death of Hunayn did not put a stop to the school of his translators who continued diligently under the leadership of his son, his nephew, and a third disciple, named 'Isa ibn Yahya ibn Ibrahim. However, no matter how diligent or well-trained Hunayn's disciples were, none attained the glorious record of producing precise, intelligent, yet simple versions of Hellenic works that their master achieved.

Hunayn ibn Ishaq's corpus of works. The scope of Hunayn's work on translations covered a large percentage of known Hellenic works during the ninth century. Modern western scholars of Hunayn's period, after surveying the breadth of his translating output, have categorized the authors of the Greek tradition of which Hunayn created Syriac and/or Arabic versions as follows--medicine; Hippocrates, Galen, Oribasius, Paul of Aegina, Rufus of Edessa, Dioscorides, and Theomnestos; philosophy, mathematics, and the rest of the sciences--Plato, Aristotle, Autolycus, Euclid, Ptolemy, Nicolaus of Damascus, Archimedes, Menelaus, Apollonius of Tyana, Artemidorus, Alexander of Aphrodisias, Porphry, and Themistius.[78] Hunayn's original writings were in the fields of medicine (i.e., two famous examples being

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[78] Ibid., pp. 423-434. Giuseppe Gabrieli, "Hunáyn ibn Isháq," op. cit., pp. 287-289.

Kitab al-Masail, or The Book of the Questions, concerning the fundamental principles of medicine, and Kitab al-Ashar Maqalat fil'Ayn, or The Book of the Ten Treatises on the Eye), natural science, bibliography, philology, philosophy, and history.[79]

The style and method of translation of Hunayn ibn Ishaq. An entire dissertation could be devoted to studying the technique of Hunayn's translating. So only a brief account of the manner in which he handled the Greek texts by putting them into either Syriac or Arabic is given.

A note of human interest involving the personal life of Hunayn reflected his mood while doing translating work every day. The noted biographer Ibn Khallikan wrote:

> I have read in the History of the Physicians, that Hunain /sic/ went to the bath every day /sic/ after his ride, and had water poured on himself; he would then come out, wrapped up in a bed-gown, and after taking a cup of wine with a biscuit, lie down, and sometimes fall asleep, till such time as perspiration should cease; he would then get up, burn perfumes to fumigate his person, and have dinner brought in; this consisted of a large fattened pullet stewed in its gravy.../after eating/ he took a sleep, and on awaking he drank four pints (ratl) of old wine; if he felt a desire for fruit freshly gathered, he took Syrian apples and quinces. This was his habit till the end of his life.[80]

The methodical procedure of the Hirian's translating

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[79] Sa'di, op. cit., pp. 434-442; Giuseppe Gabrieli, "Hunáyn ibn Isháq," op. cit., pp. 289-292.

[80] Ibn Khallikān, op. cit., p. 479.

surpassed all of the preceding Syriac translators, as well as the work of his Arabic colleagues and contemporaries. His first step in the translation process was locating the Greek text, no matter where in the Mediterranean area or Arab world it might be. Often the search for the mss. might be fruitless, or only a fragment of one uncovered, or even involve hunting in three or four countries.[81] If Hunayn were familiar with the item found, he would bring it home to Baghdad and establish a reliable text from it. However, if he were unsure of it or could not read it properly, he would then keep it in his books, translating and summarizing it later.[82] During this stage of establishing the Greek text he was often limited by only one ms., possibly full of errors. In the Risalat he mentioned a specific procedure he employed with the first six parts of Galen's Methodus Medendi of which he possessed a single ms:

> ...it was impossible for me to reconstruct the faulty parts as well as they should have been done. Afterwards I found another copy, and collated and corrected with its help as much as possible; but I would collate it a third time if I could procure a third copy.[83]

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[81] Franz Rosenthal, The Technique and Approach of Muslim Scholarship (in Analecta orientalia: Commentationes scientificae de rebus orientis antiqui, No. 24. Rome: Pontificium Institutum Biblicum, 1947), p. 18.

[82] Malcolm Lyons, Galeni in Hippocratis de officina medici commentariorum, loc. cit.

[83] Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 707.

The Risalat gave other examples Hunayn had with determining the accuracy or reliability of a Greek manuscript. His dedicated allegiance to perfection in his work was evident in that whenever he discovered a defective version of an incomplete ms., he persisted with its correcting and revising, even at the loss of sleep.[84] Another problem of establishing a text occurred when a previous copyist was careless in rendering the Greek or Syriac script. The omission of one dot (this was especially true in Syriac) might give a completely different meaning to a word. Therefore, unless more than one manuscript was available to Hunayn, he questioned its reliability.[85] He also faced the problem of authority of a manuscript. Some of the works ascribed to Galen were pseudographs, copied or written by men who wanted collections of famous ancient books.[86] The third phase of translating a text involved the process of putting the Greek or Syriac ms. into Syriac or Arabic, respectively. Hunayn's philological method was regarded as similar to modern philological procedure. "His superiority over all his contemporaries in the exactitide of his methods, his

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[84] Ibid.

[85] Franz Rosenthal, The Technique and Approach of Muslim Scholarship, op. cit., p. 29.

[86] Ibid., p. 46.

diligence and his knowledge of" four major languages of cultural communication have been acknowledged by historians of Arab science.[87] His thorough knowledge of Greek, Syriac, and Arabic led him to select equivalent word meanings according to the content of the work, rather than find the exact literal meaning of a phrase, which in idiomatic translation might have no meaning. Many of his Syriac predecessors had translated word for word, rather than selecting the complete meaning of a phrase and studying the spirit under which the work was written. Hunayn pushed through the barrier of traditional Syriac translating, which very often had been faulty and had led to incorrect interpretation of the original Greek text.[88] Hunayn began a precedent, used by successors after him until the fourteenth century (when most translations from the original Greek ms. ceased) consisting of the translator's responsibility to produce the equivalent meaning of the work translated accurately.[89] A modern historian of Arab civilization surmised that Hunayn made distinctions between works of scholarly, semi-scholarly, and popular natures. The nature,

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[87] Meyerhof, "New Light on Ḥunain ibn Isḥâq," loc. cit.

[88] Ibid., p. 711.

[89] Franz Rosenthal, The Technique and Approach of Muslim Scholarship, op. cit., p. 28.

office, and background of the patron normally determined the quality of the translation Hunayn produced. For a learned savant, Hunayn spent much time in establishing sources and rendering accurate word meanings.[90] From the above examples of Hunayn's precise and scholarly technique, a conclusion could be drawn that he established the best procedure for translating Greek manuscripts into Syriac and Arabic. His successors and pupils tried to copy his methodical manner of translation; however, rarely was there to be found a scholar who had mastered the necessary linguistic ability to render the Greek philosophical and scientific legacy in such scholarly way, as had Hunayn.

In grammar and style Hunayn, as well as his nephew, Hubaish, attained a perfect correctness, not at the expense of the beauty of the Greek original, but to its glory, constantly striving to express uniform exactness, and in the end attaining a confident mastery of each language.[91]

The three major disciples of Hunayn ibn Ishaq. Hubaish ibn al-Hasan al-A'sam al-Dimashqu (nephew of Hunayn ibn Ishaq), Ishaq ibn Hunayn al-'Ibadi (son of Hunayn ibn Ishaq), and 'Isa ibn Yahya ibn Ibrahim were the three most

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[90] Ibid., p. 41.

[91] Max Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 715.

prominent students of Hunayn; besides being lesser masters in their own right. The three continued the work of Hunayn upon his death until the first decade of the tenth century. The quality of each one's translations never reached the level of his teacher's in technique, style, or quantity.

Hubaish ibn al-Hasan al-A'sam, who lived until the end of the third century A.H. (ca. 922 A.D.), translated mostly from Greek into Arabic and Syriac into Arabic, yet sometimes he put Arabic texts into Syriac.[92] Hunayn said of his nephew in the Risalat: "Hubaish is a man of natural intelligence who wishes to follow my methods of translation; but I think that his diligence does not equal his talent."[93] One noted specialist on the style of Hunayn's school said that the technique of Hubaish, which tended towards long-windedness, was in no comparison to that of Hunayn, whose style was near to simple, uncomplicated perfection. Another commentator of the twentieth century said that Hubaish came the nearest to equalling the accuracy and productivity of his master. At times the qualities of each one's translations were so alike that later scholars and scribes mistook one's for the other's.

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[92] Brockelmann, Geschichte der arabischen Litteratur, Zweite den Supplementbänden angepasste Auflage, op. cit., p. 227; Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., pp. 708-709.

[93] Ibid., p. 708.

For centuries most of the versions Hubaish produced were attributed to his uncle. Some faulty copyists who even thought that Hubaish's name on a ms. was just a misspelling of Hunayn, crossed the former out and inserted the latter. In original production Hubaish completed the famous work of his master's The Book of Questions (on Medicine).[94] The patrons encouraging Hubaish seemed mostly to be the Banu Musa and Yuhanna ibn Masawaih.[95] Most of Hubaish's translations were in the field of medicine, and a good majority of them were by Galen.[96]

Ishaq ibn Hunayn al-Ibadi. The son of Hunayn kept up the tradition of his family, only preceded by his father and cousin. He was one of Hunayn's two sons. Ishaq's brother, Da'ud, appeared not to have dealt with translations, only with practicing medicine.[97] Ishaq was a favorite of the caliphs from al-Wathiq to al-Mutadid, the latter, whose

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[94] Richard Walzer, Galen on Medical Experience: First Edition of the Arabic Version with English Translation and Notes (London: Oxford University Press, 1946 [c1944]) p. VII.

[95] Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 709.

[96] Leclerc, op. cit., pp. 154-155; Suter, Die Araber als Vermittler der Wissenschaften..., op. cit., p. 3.

[97] Leclerc, op. cit., p. 154; Giuseppe Gabrieli, "Ḥunáyn ibn Isḥâq," op. cit., p. 286.

wazir, al-Qasim ibn 'Ubayd Allah, was a dear companion to Ishaq.[98] Concerning the quality of work of Hunayn's son, Ibn Khallikan said:

> As a translator, he /Ishaq/ attained the same superiority as his father, and equalled him in the knowledge of different languages, and the faculty of expressing his thoughts in them with precision.[99]

Another thirteenth century biographer said of Ishaq that "he almost surpassed his father in knowledge and eloquence of language."[100] The real style of Ishaq has not yet been evaluated. His father said of him that he was well familiar with Greek and sometimes made collated Arabic versions of the original Greek ms.[101] While his father and cousin concentrated more on medical works, Ishaq produced more non-medical translations, expecially in the field of philosophy. A statement such as that indicated the broad cultural background of Hunayn's son, for he had been trained in the art of medicine.[102] Little is known of the procedure of his translating method, except for one statement in

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[98] Francis J. Carmody, The Astronomical Works of Thabit B. Qurra (Berkeley, California: University of California Press, 1960), p. 18.

[99] Ibn Khallikān, op. cit., pp. 189-190.

[100] Meyerhof, "New Light on Ḥunain ibn Isḥâq," loc. cit., citing al-Qifṭī, p. 80.

[101] Ibid.

[102] Ibn Khallikān, loc. cit.

al-Fihrist that quoted Ishaq discussing an Arabic translation of a commentary of Themistius:

> I translated this work into Arabic from a defective manuscript. Then, after thirty years, I found an extremely good manuscript with which I collated my first version...and it is the commentary of Themistius.[103]

The Hellenic authors translated by Ishaq were: Euclid, Ptolemy, Aristotle, Menelaus, Theodosius, Alexander of Aphrodisias, Archimedes, Autolycus, and Hipsicles.[104] Another renowned translator with whom Ishaq had correspondence was the Sabean Thabit ibn Qurra, whose biography appears later in this chapter.[105] Ishaq's death occurred in 910 or 911 (A.H. 298), after suffering a disabling stroke in his last years.[106]

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[103] Malcolm Lyons, "An Arabic Translation of the Commentary of Themistius," loc. cit.

[104] Claire Baudoux, "Une Édition polyglotte orientale des Éléments d'Euclide: La Version arabe d'Isḥāq et ses dérivées," Archeion: Archivio di storia della scienza, XIX (1937), p. 70; Malcolm Lyons, "An Arabic Translation of the Commentary of Themistius," loc. cit.; J. Finnegan, loc. cit.; Heinrich Suter, "Die Mathematiker und Astronomen der Araber und ihre Werke," Abhandlungen zur Geschichte Der mathematischen Wissenschaften mit Einschluss ihrer Anwendungen, X (1900), pp. 39-40; Brockelmann, loc. cit.

[105] Carmody, The Astronomical Works of Thabit B. Qurra, loc. cit.

[106] Brockelmann, Geschichte der arabischen Litteratur, Zweite den Supplementbänden angepasste Auflage, loc. cit.

'Isa ibn Yahya ibn Ibrahim. The third most prominent disciple of Hunayn ibn Ishaq was Isa ibn Yahya ibn Ibrahim, whose record of life was obscure. Isa worked mostly with translating Hunayn's Syriac versions into Arabic. Ibn Abi Usaibi'a wrote that Hunayn was fond of Isa and approved of his work. Al-Fihrist and al-Qifti stated that besides translations, he wrote medical treatises of his own.[107] The Syriac and Arabic versions of the Greek writers he prepared were: Euclid, Galen (the Risalat reported one Syriac and twenty-four Arabic versions), Oribasius, Hippocrates, and Dioscorides.[108]

Three minor pupils of Hunayn ibn Ishaq. In addition to the three most illustrious proteges of Hunayn, three others of lesser importance worked under his direction: They were: Musa ibn Khalid, Abu 'Uthman Sa'id ibn Ya'qub adl-Dimashqu, and 'Isa ibn Ali. The first, Musa ibn Khalid, translated from Syriac into Arabic, usually processing Hunayn's Syriac works, and putting them into Arabic. Both Al-Qifti and Ibn Abi Usaibi'a listed him under Hunayn's

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[107] Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., pp. 709-710.

[108] Brockelmann, Geschichte der arabischen Litteratur, Zweite den Supplementbänden angepasste Auflage. op. cit., p. 228; Leclerc, op. cit., pp. 183-184. Meyerhof, "New Light on Ḥunain ibn Isḥâq," loc. cit.; Carmody, The Astronomical Works of Thabit B. Qurra, loc. cit.

school of translation. The Risalat mentioned Musa as putting sixteen Syriac works of Galen into Arabic.[109] The second of this group was Abu Uthman Said ibn Yaqub of Damascus, who translated Hunayn's Syriac works of Galen forming the Alexandrian canon of medicine.[110] Abu Uthman was also credited with translating into Arabic some treatises reported to have been Alexander of Aphrodisias'.[111] In A.D. 915 (A.H. 303), the wazir of Caliph al-Muqtadir (A.D. 908-932, A.H. 296-320)[112] put Abu Uthman in charge of the hospitals in Baghdad, Mecca, and Medina. Al-Qifti attributed translation works of Aristotle, Euclid and Prophyry to Abu Uthman.[113] The third lesser disciple of Hunayn was Isa ibn Ali, who according to Ibn Abi Usaibi'a was one of Hunayn's best proteges. In his works appeared Galenic translations, besides original treatises in medicine.[114]

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[109] Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 710.

[110] _____, "Les Versions syriaques et arabes des écrits galéniques," op. cit., p. 50.

[111] Pines, loc. cit.

[112] Hitti, op. cit., p. 468; Sourdel, op. cit., pp. 727-728.

[113] Meyerhof, "New Light on Ḥunain ibn Isḥâq," loc. cit.

[114] Ibid.

Other contemporary translators with Hunayn ibn Ishaq. The following group of men were translators at the same time of Hunayn's school. Most Nestorians were participants in his noted circle of savants, while others translated separately coming from Sabean background. The most renowned in the latter group was Thabit ibn Qurra, who shall be dealt with later in this chapter.

Tuma al-Ruhawi. Also known as Thomas of Edessa, Hunayn charged him with translating into Syriac a Galenic work. Tuma is mentioned in the Risalat.[115]

Ibrahim ibn al-Salt. This translator was cited by Ibn Abi Usaibi'a as having medium skill in translating. The Risalat listed four works Ibrahim did for Hunayn; two in Syriac and two in Arabic.[116] One of his patrons was Abu al-Hasan Ahmad ibn Musa.[117]

Istifan ibn Basil. Stephen, son of Basil, was a pupil of Hunayn. Stephen's translating work was known during the reign of al-Mutawakkil who established a school of

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[115] Ibid., p. 705; Cf. Baumstark, Geschichte der syrischen Literatur, op. cit., pp. 121-122.

[116] Meyerhof, "New Light on Ḥunain ibn Isḥâq," loc. cit.

[117] Bergsträsser, Ḥunain ibn Isḥāq über die syrischen und arabischen Galen-Übersetzungen, op. cit., p. 25.

translating for Hunayn. Ibn Abi Usaibi'a cited Stephen with producing the first Greek into Arabic translation of Materia Medica by Dioscorides. Hunayn revised part of the work later. The Risalat mentioned that Stephen translated nine versions in Arabic of Galen's books. To Stephen was also attributed the first Arabic version of Oribasius' books on medicine. The translator's style was good, but not as eloquent as Hunayn's, his master's.[118]

Yuhanna ibn Bokhtishu. This Nestorian physician lived during the time of Hunayn and translated the De Antidotis.[119] The Risalat stated that he translated into Syriac for Hunayn.[120]

Mansur ibn Athanas al-Sabi'. About the only things known about Mansur were that he was a Sabean (of the same religious following as Thabit ibn Qurra) and that he translated into Syriac Galen's De Natura Humana. Information concerning his style, method, patrons, etc. have not been uncovered.[121]

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[118] Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 706.

[119] Ibid., p. 705.

[120] Bergsträsser, Ḥunain ibn Isḥāq über die syrischen und arabischen Galen-Übersetzungen, op. cit., p. 31.

[121] Ibid., p. 40; Meyerhof, "New Light on Ḥunain ibn Isḥâq," loc. cit.

Two other scholar-translators who lived at the time of Hunayn and his translating school, but who were better known for other achievements rather than translating, were al-Kindi whose full name was Abu Yusuf Ya'qub ibn Ishaq al-Kindi, and Thabit ibn Qurra. Al-Kindi, the philosopher of the Arabs, lived in the second half of the ninth century A.D. and was of Arabian descent.[122] One nineteenth-century historian of Arab mathematics and astronomy listed al-Kindi as a translator of the Greeks.[123] Exactly what his versions were most likely in Arabic, were not listed. However, his original writings certainly indicated that he had access to Hellenic disciplines in philosophy, mathematics, astronomy, medicine, and music.

Thabit ibn Qurra. Biography. Abu al-Hasan Thabit ibn Qurra ibn Marwan al-Harrani, more popularly known as Thabit ibn Qurra, lived sometime between A.D. 826-901 (A.H. 211-289) and A.D. 834-901 (A.H. 220-289).[124] He was a Mesopotamian native of Harran, a city, previously mentioned

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[122] Hitti, op. cit., p. 370.

[123] Suter, "Die Mathematiker und Astronomen der Araber und ihre Werke...," op. cit., p. 23.

[124] Nakosteen, op. cit., p. 202; cf. Suter, "Die Mathematiker und Astronomen der Araber und ihre Werke...," op. cit., p. 34; Max Meyerhof, "The 'Book of Treasure,' an Early Arabic Treatise on Medicine," Isis, XIV (1930), p. 57; _____, "New Light on Ḥunain ibn Isḥâq," loc. cit.

in Chapter I, as the major center in the Middle East at that time for Sabeans, pagan star-worshippers. During Thabit's younger days the city of Harran became the recipient of the School of Alexandria, previously moved from Egypt in A.D. 718 to Antioch. During A.D. 850 the Abbasid Caliph Al-Muta'did transferred the "School" from Antioch to Harran, where flourished the remnants of Hellenic thought taken from Alexandria.[125] The Sabeans through the historical development of their religion had become the best astronomers and mathematicians in the Middle East. Therefore, the transfer of the Alexandrian School to Harran where capable and scholarly Sabeans resided seemed a logical move.

Muhammad Musa, one of the Banu Musa, "discovered" Thabit on a trip to Harran and the two returned to Baghdad.[126] With Thabit went much of the Sabean knowledge of astronomy and mathematics which had thrived in his city, especially after the transfer of the Alexandrian School.[127] From taking evidence introduced by modern twentieth century scholars concerning the relationship between Muhammad Musa and Thabit,

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[125] Max Meyerhof?, "Fine de Schola de Alexandria secundum aliquo auctore Arabo," Archeion, XV (1933), p. 15.

[126] Carmody, The Astronomical Works of Thabit B. Qurra, p. 15.

[127] Max Meyerhof, "La Fin de L'École d'Alexandrie d'aprés quelques auteurs arabes," op. cit., p. 15.

a safe assumption could be made that during his early life in Baghdad, his primary patron was the former. Later in Thabit's life he came into contact with other patrons, e.g., Musa 'Isa ibn Asad (a Christian in academic argument with al-Kindi) and possibly the Wazir al-Qasim'Ubayd Allah ibn Sulayman ibn Wahb. Thabit had correspondence with Ishaq ibn Hunayn.[128] The main problem of modern scholars in working with the works of Thabit was that a great number of his mss. or copies of them were missing or lost.[129] Secondly, even the extant works, definitely attributed to him, were difficult to date.[130] So unless the work itself had some indication of for whom the translation was prepared, determining the ms. date remained a problem.

Information concerning Thabit's translations of Greek texts was not entirely reliable. Hunayn's Risalat listed two items Thabit translated from Syriac into Arabic, one for Muhammad Musa.[131] Thabit's translations and revisions of

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[128] Carmody, The Astronomical Works of Thabit B. Qurra, op. cit., p. 16.

[129] E. Bessel-Hagen and O. Spies, "Tabit B. Qurra's Abhandlung über einen Halbregelmässigen Vierzehnflächner," Quellen und Studien zur Geschichte der Mathematik, Astronomie, and Physik, Part B. Vol. 2 (1932), p. 186.

[130] Francis J. Carmody, "Notes on the Astronomical Works of Thābit ibn Qurra," Isis, 46 (1955), p. 236.

[131] Bergsträsser, Hunain ibn Ishāq über die syrischen und arabischen Galen-Übersetzungen, op. cit., pp. 29 and 38.

Greek works included the following authors: Archimedes, Autolycus, Apollonius, Ptolemy, and Euclid. Some of Ishaq ibn Hunayn's translations of Euclid, Archimedes, and Autoclycus, Thabit revised.[132] Ibn Khallikan said in his Biographical Dictionary that Thabit, besides being a man of medicine, was also a philosopher and scientist. He devoted most of his time to philosophy. Thabit composed twenty treatises on different branches of science. "He attained by his talents an eminent rank among his contemporaries."[133] His main contribution in transmitting Greek knowledge to the Arabs was through his revision and correction of Arabic translations of astronomical and mathematical works.

IV. THE POST-HUNAYN BODY OF TRANSLATORS

The group of translators succeeding Hunayn's school, other than translator-proteges whom he trained, lived from the end of the ninth century A.D. until the end of the tenth century; the last known Syriac translator dying in 1008 A.D.[134] While the other three periods had been characterized by Nestorian translators the "post-Hunayn" body

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[132] Suter, Die Mathematiker und Astronomen der Araber und ihre Werke, op. cit., p. 36.

[133] Ibn Khallikān, op. cit., p. 288.

[134] Brockelmann, Geschichte der arabischen Litteratur, Zweite den Supplementbänden angepasste Auflage, op. cit., p. 229.

deviated from the norm and Jacobite and Melkite Syriac translators dominated the scene. While the following list is by no means a complete list of Hunayn's successors, it is as thorough a listing of what the major western sources knew about the later translators of Syriac into Arabic as was available.

Yusuf al-Khuri (Joseph the Priest). Little is known of Yusuf except that in his early days he prepared one Galenic translation into Syriac for Hunayn of poor quality.[135] His life spanned the tenth century during the reign of al-Muqtafi, A.D. 902-908 (A.H. 289-295).[136] Yusuf was also known for an Arabic translation of a work on Archimedes, now lost.[137]

Qusta ibn Luqa. The only important representative of the Melkite Christians to be a translator was Qusta ibn Luqa al-Ba'labakki, born in A.D. 820 (A.H. 205).[138] As a young

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[135] Bergsträsser, Ḥunain ibn Isḥāq über die syrischen und arabischen Galen-Übersetzungen, op. cit., p. 24.

[136] Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 704; Sourdel, op. cit., p. 727.

[137] Meyerhof, "New Light on Ḥunain ibn Isḥâq," loc. cit.

[138] Carl Brockelmann, Geschichte der arabischen Litteratur, Erster Supplementband (Leiden: E. J. Brill, 1937), p. 365.

man he traveled through the Byzantine Empire, the Roman sphere of influence and Syria, educating himself, besides collecting many Greek works. Upon returning to Iraq, he was called to Baghdad, where he began the translation project of putting the Greek manuscripts which he had found into Syriac and Arabic.[139] Besides Qusta's original translating work from the Greek, he revised and corrected many other translations done before him. His training included medicine, philosophy, astrology, mathematics, and music, which later equipped him to compose original treatises in those fields.[140] Two contemporary colleagues of his who wrote of him were Thabit ibn Qurra and al-Kindi. The latter said that Qusta was well read in arithematic, geometry, astronomy, music, philosophy, besides being an expert doctor.[141] Few facts were known regarding his life. The three main biographical sources used by modern historians in constructing Thabit's life and works were al-Fihrist, al-Qifti, and Ibn Abi Usaibi'a. In the later part of his life Qusta went to

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[139] Ibid.; Suter, Die Araber als Vermittler der Wissenschaften in deren Übergang vom Orient in den Okzident, op. cit., p. 3; Giuseppe Gabrieli, "Nota biobibliografica su Qusṭā ibn Lūqā," loc. cit.

[140] Ibid.

[141] Ibid., p. 363; Giuseppe Gabrieli, "La Risālah di Qusṭā ibn Lūqā 'Sulla Differenza Tra la Spirito e l'Anima,'" Rendiconti della Reale Accademia dei Lincei, Classe di scienze morali, storiche, e filologiche, Ser. V, Vol. XIX, (1910), p. 623.

Armenia upon the request of Prince Sanharib to write books of science. Qusta remained there writing many books the rest of his life until he died in 912.[142] Al-Qifti and Ibn Abi Usaibi'a stated that on Qusta's tomb was constructed a cupola in his honor, as if it were done in honor of a king or head of a religious order.[143]

During Qusta's time in Baghdad the Caliphs al-Musta'in, al-Mu'tamid, and al-Muqtadir reigned. Whether or not these three or their wazirs patronized Qusta has not been ascertained.[144]

Qusta's versions of Greek works into Arabic included the following authors: Anatolius of Berytos, Archimedes, Aristotle, Aristarch, Autolycus, Diophantes, Heron of Alexandria, Euclid, Hipsicles, Plato, Plutarch, and Theodisius.[145] His Syriac translations from the Greek were not available to the writer.

The original works of Qusta ibn Luqa were in the fields of mechanics, engineering, mathematics, astronomy and

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[142] R. P. Paul Sbath, "Le Livre des Caractères de Qosṭā ibn Loūqā; Grand savant et célèbre médecin chrétien qu IX^e siècle," Bulletin de l'Institut d'Égypte, XXIII (1941), p. 103.

[143] G. Gabrieli, "Nota biobibliografica su Qusṭā ibn Lūqā," op. cit., p. 362.

[144] Ibid., p. 363.

[145] Ibid., pp. 344-362; Sarton, op. cit., p. 370.

astrology. He also wrote on medicine, philosophy, and history, music, and religion.[146] One scholar of Qusta's original works listed them as sixty-nine in number.[147]

Al-Fihrist preferred the doctor of Baalbek to Hunayn ibn Ishaq, believed to be the most illustrious among his contemporaries, on the grounds of Qusta's virtue and nobility, his familiarity with medicine, his consideration of philosophy, or engineering, mathematics, music and for his profound knowledge of Greek, and ability of writing Arabic.[148]

Abu Bishr, Matta b. Yunus al-Qunna'i. A Nestorian translator monk who prepared Syriac translations of Aristotelian works, e.g., Poetics, lived until A.D. 940.[149] Abu Bishr also rendered a Syriac translation of a commentary on Themistius.[150]

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[146] G. Gabrieli, "Nota biobibliografica su Qusṭā ibn Lūqā," loc. cit.

[147] W. H. Worrell, "Qusta ibn Luqa on the Use of the Celestial Globe," Isis, 35 (1944), p. 285.

[148] Sbath, "Le Livre de Caractères de Qosṭā ibn Loūqā...," op. cit., p. 104.

[149] Baumstark, Geschichte der syrischen Literatur, op. cit., p. 232; Brockelmann, Geschichte der arabischen Litteratur, Zweite den Supplementbänden angepasste Auflage, op. cit. 228.

[150] Baumstark, Geschichte der syrischen Literatur, op. cit., p. 230.

Isa b. Ibrahim al-Nafisi. In the mid-tenth century lived a Hamdanid court physician, named Isa b. Ibrahim, who was reported to have been an excellent translator from the Syriac. One work extant said to have been translated by Isa was the "Letter of the Golden House," actually the pseudo-Aristotelian De Mundo, of Aristotle to Alexander the Great.[151]

Abu Zakariya' Yahya ibn 'Adi al-Mantiqi. This translator was commonly known as Yahya ibn Adi, who was a Jacobite Christian and student of Abu Bishr and al-Farabi.[152] He was also credited with preparing versions of Plato's Laws and a treatise on geoponics by Eusthathe.[153] Yahya died at the age of eighty-one, in A.D. 973 (A.H. 363-364).[154]

Two other translators in the post-Hunayn period of

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[151]Samuel M. Stern, "The Arabic Translations of the Pseudo-Aristotelian Treatise De Mundo," Le Museon, LXXVIII (1964), p. 193.

[152]Brockelmann, Geschichte der arabischen Litteratur, Zweite den Supplementbänden angepasste Auflage, loc. cit.

[153]Francesco Gabrieli, "Un Compendio arabo delle Leggi di Platone," loc. cit., p. 20; R. P. Paul Sbath, "L'Ouvrage géoponique d'Anatolius de Bérytos (IVe Siècle); Manuscrit arabe...," Bulletin de L'Institut d'Égypte, XIII (1931), p. 48.

[154]Brockelmann, Geschichte der arabischen Litteratur, Zweite den Supplementbänden angepasste Auflage, loc. cit.

which very little has been uncovered were Al-Hu. b. Ibrahim al-H. b. Khurshid al-Tabari al-Natili and Abu 'A. 'sa b. Ishaq b. Zur'a. The former was known to have lived at the end of the tenth century in the service of a member of a royal family. The latter, a Jacobite Christian, was a doctor and philsopher in Baghdad. He translated medical and philsophical manuscripts, and died in A.D. 1008 (A.H. 398).[155]

After the beginning of the eleventh century Baghdad and vicinity showed no evidence of translating Greek into Syriac and Arabic. The function of translating was transferred from the eastern Mediterranean to Cordoba, Toledo, and Salerno where Syriac texts were practically forgotten, Greek texts unheard of, and Arabic versions of the "Classical" heritage the main source for translating into Latin.

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[155] Ibid., p. 229.

CHAPTER V

THE SELECTION OF NESTORIAN TRANSLATORS UNDER ABBASID PATRONAGE

Since the majority of translators came from a Nestorian background, their selection was emphasized in this thesis, rather than the translators who came from Sabean, Jacobite, or Melkite Christian backgrounds. Brief reference was given to Thabit ibn Qurra, who was raised in Sabean surroundings. But for Jacobite and Melkite Christian translators no information regarding their selection was available. Both of these latter two religious groups' representative translators knew Syriac and Arabic, because of environmental political, and religious factors. Quite probably reasons for selection of translators from the Sabean and Melkite groups were similar to the factors in Nestorian translator selection. The case of Qusta ibn Luqa exemplified the previous assumption. His two major patrons were among the Banu Musa and probably the caliphs themselves during Abbasid rule. The period, he spent in Armenia was disregarded since his original work was done there, rather than translations.

Syriac and Arabic mss. concerned with translators' works in the western hemisphere were unknown to the writer's knowledge. Currently an American project is in progress to locate Syriac mss. in the United States. The need for such

a project has just recently been stated in a paper presented to the American Oriental Society's annual conference at University of Chicago's Oriental Institute in April, 1965.[1]

In the writer's correspondence with Rev. James C. Clemons, the deliverer of the speech, there was no concrete evidence cited for Syriac mss. dated in the ninth century which contained Baghdadi translators' works.[2]

One source did exist attributed to the hand of Hunayn ibn Ishaq. The source was a letter by the famous Abbasid translator to 'Ali ibn Yahya entitled: Risalat Hunain ibn Ishaq ila 'Ali ibn Yahya fi Dhikr ma Turjim min Kutub Jalinus bi 'Ilmihi wa ba'd ma tam Yutarjam.[3] 'Ali ibn Yahya, wazir to the Caliph al-Mutawakkil, was a patron of science and learning.

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[1] James C. Clemons, "Brief Communication." Journal of the American Oriental Society, 85, Part II (1966), pp. 208-210.

[2] At present a checklist is to be published of Syriac mss. in the United States during 1966, by the editor of Orientalia Christiana periodica. Personal correspondence of the author, letter from James C. Clemons, Nov. 11, 1965. Houghton Library at Harvard University and Andover-Harvard Theological Library possess Syriac mss. of Biblical, liturgical and ecclesiastical natures, but no classical Greek mss. in Syriac, Personal correspondence of the author, letter from Harold Brueland of the Harvard Divinity School, March, 21, 1966.

[3] Max Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., pp. 685-686; Bergsträsser, Ḥunain ibn Isḥāq über die syrischen und arabischen Galen-Übersetzungen, op. cit., p. and l. _____. Neue Materialien zu Ḥunain ibn Isḥāq's Galen-Bibliographie, op. cit, pp. 91-98.

[4] Sa'di, op. cit., p. 419.

The Risalat (which means message or letter in Arabic) was in Hunayn's own writing and was discovered by Professor Gotthelf Bergsträsser of Munich in the Aya Sophia Mosque Library in Istanbul. The ms. was the only one known to exist and therefore is priceless. The Risalat was previously discussed in more detail in Chapter IV. A German version was copied from Arabic ms. and then translated into German by Professor Bergsträsser. Only a partial English translation exists done by a member of the medical profession in the United States of Iraqi descent.[5]

The discussion of patronage most fortunately was brought up by Hunayn, and a list of the men for whom he worked was listed in his Risalat.[6] Dr. Max Meyerhof of Cairo divided these men into two categories: First were "prominent statesmen, themselves mostly learned men, nearly all of them Muslims"; second were "teachers, colleagues, and friends of the translators, nearly all of whom were Christian (Nestorian) physicians of Junde-Sapor or Baghdad."[7]

The oldest source, excluding original or first hand information, concerned with the work of the Baghdadi translators was contained in the Kitab al-Fihrist (literally

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[5] Ibid., pp. 409 and 446.

[6] Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit. pp. 713-720.

[7] Ibid., p. 713.

Book of the Index), which held a catalog of Arabic book titles compiled by Muhammad ibn Ishaq, also called al-Nadim, a bookman and librarian of the latter half of the tenth century. For western scholars knowing both Arabic and German, the work is priceless, for the catalog is in Arabic with notes in German.[8]

From al-Fihrist, the two thirteenth-century Arab scholars al-Qifti and Ibn Abi Usaibi'a compiled Tarikh al-Hukama' and Kitab...al-Atibba',[9] respectively, the two greatest works on biographies of Greek and Arab scholars at that time.[10]

A contemporary of al-Qifti and Ibn Abi Usaibi'a was the Demascene, Ibn Khallikan, scholarly arranger of the well-known biographical dictionary entitled Wafayat al-A'yan (Biographical Dictionary) including biographical information

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[8] Muḥammad ibn Isḥāq, Kitāb al-Fihrist, ed. G. Flügel (Leipzig: F.C.W. Vogel, 1971-1872).

[9] al-Qifṭī, Tarīkh al-Ḥukamā', ed. Julius Lippert (Leipzig: /n.m./ 1903; Ibn Abī Usaybi'ah, Kitāb 'Uyūn al-Anbā' fi Ṭabaqāt al-Aṭibbā'..., ed. August Müller, 2 vols. (/Cairo/: al-Maṭabi'at al-Wahhabiyya /1882/).

[10] "al-Nadīm, Abu al-Faradj Muḥammad B. Abī Ya'kub...," The Encyclopaedia of Islam: A Dictionary of the Geography, Ethnography, and Biography of the Muhammadan Peoples (Leiden: E. J. Brill, 1936), III, p. 809.

about the Baghdadi translators and their contemporaries.[11]

The noted English Arabist, Professor A. J. Arberry of Cambridge University, said that even the very book titles of the Abbasid translators were mainly known through the works of Muhammad ibn Ishaq, al-Qifti, Ibn Abi Usaibi'a, and Hajji Khalifa.[12] A shortage of the translators' works exists so dependence upon thirteenth-century scholars was necessary in order even to construct partly the life and works of the school of translators.

Therefore, the proof of who actually selected and patronized the translators was based upon one primary source. Only generally could historians deduce from secondary sources the actual patrons of the translating bodies. Likewise, any type of investigation into the political, social, religious, or economic causes behind translator selection and patronage was purely a supposition. Solutions to the problem of determining causes could only be settled when artifacts or manuscripts dating back to the translators or their contemporaries would be uncovered most probably in

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[11] Ibn Khallikān, op. cit., entire volume; Claude Cohen (ed.), Jean Sauvaget's Introduction to the History of the Muslim East: A Bibliographical Guide Based on the Second Edition (Berkeley, California: University of California Press, 1965), p. 34.

[12] A. J. Arberry, "An Early Arabic Translation from the Greek," loc. cit.

scholarly library resources in the Middle East, North Africa, Europe, or in the private holdings of some manuscript collector in the Middle East.

I. THE PATRONS

Statements made by contemporary scholars of the medieval Islamic world indicated that Abbasid patronage of the translators of the Greek tradition into Syriac and Arabic stemmed from both public officials and private individuals.

The art and activity of translating Greek texts did not reach its height until the Abbasid period. Nevertheless, during the Umayyad Empire translating activity, patronized by the Caliph Khalid, did occur according to al-Fihrist. This specific account written by the noted Arab bibliographer was proved legendary by twentieth-century historians of Arab science. Yet one could deduce from the legend that al-Nadim took his information from some source which believed that groups translating Greek manuscripts were functioning during Umayyad rule. Documents and mss. sources from which a historian could construct facts concerning Umayyad patronage of such groups has not been uncovered.[13] In general, caliphs and wazirs comprised the public body of patrons.

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[13] Hitti, op. cit., pp. 250-256.

Caliphs. Early caliphal patronage of translators under the Abbasids can be proved by relying upon al-Fihrist, Ibn Abi Usaibi'a, al-Qifti, and similar sources. Al-Fihrist mentions al-Mansur (A.D. 754-775, A.H. 136-158), the second Abbasid caliph and the builder of Baghdad,[14] as having had Galenic and Hippocratic works translated. In another secondary source, works of Ptolemy and Euclid were said to have been translated.[15]

Later, the famous Caliph Harun al-Rashid (A.D. 786-809, A.H. 170-193) supposedly returned from the Byzantine Empire with Greek mss. which he requested Christian translators to put into Syriac or Arabic.[16] This fact was supported by thirteenth-century Arab and Syriac historians and bibliographers such as Bar-Hebraeus (known in Arabic as Ibn al-'Ibri), Ibn Abi Usaibi'a, and al-Qifti.[17]

Under the Caliph al-Ma'mun (A.D. 813-833, A.H. 196-218),[18] the functioning of the Abbasid translators reached a climax, yet some of the patrons of the translators originated in private circles and not in the caliphal court.

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[14] Landau, op. cit., p. 59; Sourdel, op. cit., p. 725.

[15] Hitti, op. cit., p. 311.

[16] Sourdel, loc. cit.; Landau, loc. cit.

[17] Hitti, op. cit., p. 312.

[18] Sourdel, op. cit., p. 726; Landau, loc. cit.

Ibn Abi Usaibi'a mentions al-Ma'mun's decision to send a mission of Baghdadi scholars, namely al-Haggag b. Matar, Ibn Batriq, Hunayn ibn Ishaq, and a person called Salma, all of whom were employees at the Bayt al-Hikmat or librarians at court, to Greece to search for the mss. of the classical age of Greece. When the group returned to Baghdad with the mss. retrieved from Byzantium, the caliph paid them in gold pieces, after they had rendered the mss. from Greek into Arabic.[19]

Al-Mutawakkil (A.D. 847-861, A.H. 232-247)[20] patronized the translators, yet his relations with certain Nestorian translators were not always smooth.[21]

The last Abbasid caliph who was directly attributed to having patronized the translators was the Caliph al-Mu'tadid (892-902 A.D., 279-289 A.H.)[22] Ibn-Abi Usaibi'a said that the most famous of Sabean translators, Thabit ibn Qurra, became a beneficiary of caliphal support and friendship.[23]

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[19] G. Gabrieli, "Hunáyn ibn Isháq," op. cit., p. 283; Lyons, "The Relations Between Greek and Arabic Philosophy...," op. cit., p. 64.

[20] Sourdel, op. cit., p. 726; Landau, loc. cit.

[21] Hitti, op. cit., p. 313.

[22] Sourdel, op. cit., p. 727; Landau, loc. cit.

[23] Hitti, op. cit., p. 314.

Wazirs. The second type of public patron was closely related to the first. In fact, the caliphal wazir became as strong a supporter of translating activities as was his immediate superior, the caliph.

The office of wazir, developed by Khalid ibn Barmak, during Abbasid control often possessed powerful caliphal advisors who patronized the translators. The first example Arab historians wrote about Barmakid patronage was the case of the son of Khalid, Yahya, who instructed Harun al-Rashid, the latter appointing Yahya as wazir in 786 A.D. (170 A.H.).[24] The Fihrist stated that Yahya commissioned certain individuals to have the Almagest translated from Greek, but the result was not successful.[25]

Ibn Khallikan stated that Ja'far ibn Yahya, one of the immediate successors of Yahya ibn Khalid, and last Barmakid wazir, encouraged the translation of Greek texts into Arabic.[26] The Wazir Ja'far at the same time introduced paper, replacing parchment and papyrus used previously in governmental and wazirial offices.[27] The presence of a new

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[24] Landau, op. cit., pp. 52 and 59; Sourdel, op. cit., p. 725.

[25] Hitti, op. cit., p. 315; Lyons, loc. cit.

[26] Ibn Khallikān, op. cit., p. 478; Sourdel, loc. cit.

[27] Hitti, op. cit., pp. 414-415.

material which began to supply the translators with a writing substance easier to produce than either vellum or papyrus resulted in more availability of manuscript translations. During the period contemporary with Harun al-Rashid crude fibre paper and rag paper developed. The latter was a Chinese discovery, with Arab technological improvement.[28]

The next wazir known to have patronized translating bodies was Muhammad ibn 'Abd al-Malik al-Zayyat, chief minister to the Caliph al-Mu'tasim (833-842 A.D., 218-227 A.H.)[29] first of the Abbasid caliphs at Samarra. Al-Zayyat's patronage was documented through the Ibn Ali Usaibi'a's account of the wazir's paying regularly large sums to at least eight translators, who served him continually.[30]

The last evidence given to patronage of an Abbasid wazir was contained in Ibn Khallikan's Biographical Dictionary, which stated that al-Qasim ibn 'Ubayd Allah (in office A.D. 901-902, A.H. 288-289) of al-Mu'tadid's court became so friendly with Hunayn ibn Ishaq's son, Ishaq

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[28] Viktor E. Gardthausen, Das Buchwesen im Altertum und im byzantinischen Mittelalter (Vol. I. of Griechische Palaeographie. 2 vols. second edition; Leipzig: Verlag von Viet & Comp., 1911-1913), p. 58.

[29] Hitti, op. cit., p. 466; Sourdel, op. cit., p. 726.

[30] Max Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 714.

ibn Hunayn[31] that he "communicated to him secrets which he concealed from all others."[32]

Governors and other miscellaneous officials. The Risalat mentioned three prominent statesmen for whom Hunayn did Galenic translations. The first was Ishaq ibn Sulaiman, who under Harun al-Rashid was governor of Egypt. Later in life, Ishaq spent years in Baghdad, where Hunayn in an earlier part of his lifetime translated for the ex-governor. The second person from whom Hunayn worked in the miscellaneous officials category was Ishaq ibn Ibrahim al-Tahiri, governor of a Persian province and cousin to the founder of the Persian Tahirid dynasty. Al-Qifti refers to Ishaq ibn Ibrahim al-Tahiri under another name, stating that it was the Tahirid whom al-Ma'mun entrusted with protecting the Banu Musa the outstanding patrons of Abbasid science. The Risalat stated that Hunayn translated a work of Galen into Arabic. The third official mentioned in the Risalat was 'Abdallah ibn Ishaq, a judge (Qadi) in Baghdad under the Caliph al-Wathiq (842-847 A.D., 227-232 A.H.) and governor of a Persian province under al-Musta'in (862-866 A.D., 248-251 A.H.). Ishaq, son of Hunayn the translator corrected a Galenic work

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[31] Hitti, op. cit., p. 314; Sourdel, op. cit., p. 727.

[32] Ibn Khallikān, op. cit., p. 188.

in the Arabic version for "Abdallah.[33] There existed other patrons who were not entirely acting as public officials, but had private cultural interests as well.

The Banu al-Munajjim were patrons of Greek science who sent persons to retrieve mss. from Byzantine during the peak of Abbasid cultural activity.[34] To one of the Munajjim (astrologer), Hunayn ibn Ishaq dedicated his Risalat. The particular person for whom Hunayn made the dedication was Abu al-Hasan 'Ali ibn Yahya al-Munajjim, friend and secretary of al-Mutawakkil. 'Ali ibn Yahya (d. 888 A.D.), besides being a military commander, was a patron of science and culture. Hunayn's translating colleagues and relatives received much encouragement from 'Ali ibn Yahya, who requested the Baghdadi school to work on Galenic translations.[35]

The patrons concerned with private, rather than public interest, were "teachers, colleagues and friends of the translators, nearly all of whom were Christian

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[33] Max Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., pp. 715-716; Hitti, op. cit., pp. 297 and 318; Sourdel, op. cit., p. 726.

[34] Lyons, "The Relations between Greek and Arabic Philosophy and Science," loc. cit.

[35] Max Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 714.

(Nestorian) physicians of Jonde-Shapur or Baghdad."[36]

First, the most famous private group of individuals acting as patrons of the translators were the Banu Musa, sons of Musa ibn Shakir. The three sons of Musa, Abu Ja'far Muhammad, Abu al-Kasim Ahmad, and al-Hasan "were great patrons of philosophy and science and applied the main part of their fortune to the collection of Greek manuscripts the translation of which into Arabic was made at their expense."[37] In the Risalat Hunayn mentioned that Abu Ja'far Muhammad ibn Musa possessed several books of Galen in Arabic. Abu Ja'far Muhammad, according to the Risalat was most particular about the quality of the Arabic translation from the Greek. If the translation presented to him did not meet his satisfaction, he had it revised and corrected.[38] The only primary evidence that existed supporting the selection of the Baghdadi school of translators was the Risalat of Hunayn ibn Ishaq. The following list of physicians, teachers, colleagues, and friends of the translators was taken from

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[36] Max Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 713.

[37] Ibid., pp. 714-715. Stephen and Nandy Ronart, Concise Encyclopedia of Arabic Civilization: The Arab East (Amsterdam: Djambatan, 1959-), p. 395.

[38] Marshall Clagett, The Arabo-Latin Tradition (Vol. I of Archimedes in the Middle Ages. vols.; Madison, Wisconsin: University of Wisconsin, 1964-), p. 226; Meyerhof, "New Light on Ḥunain ibn Isḥâq." loc. cit.

the Risalat.

Teacher-physicians of translators. Since the only primary source of the translating period comes from Hunayn ibn Ishaq's knowledge of contemporary translators, it was impossible to give facts about patrons of earlier and later translators. Secondary and tertiary evidence of the two other translating periods existed but evidence was weak, and some of the narratives appeared to be hearsay evidence.

Yuhanna ibn Masawaih (A.D. 777-837), born and medically trained at Junde-Sapor, served as physician to Harun al-Rashid in Baghdad, and became Hunayn ibn Ishaq's master in first learning Syriac and Arabic translating methods. Hunayn said of his teacher, "I translated a work of Galen into Syriac...for Yuhanna ibn Masawaih and I took pains to express the meaning as clearly as possible; for this man likes plain (intelligible) expression and urges constantly in this direction."[39]

The man reported to have first suggested to Hunayn the work of translating was Gabriel ibn Bokhtishu, "the most prominent member of the Nestorian family of physicians which served under the long line of Abbasid caliphs during

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[39]Meyerhof, "New Light on Ḥunain ibn Isḥâq," op. cit., p. 717.

the VIIIth /sic/ and IXth /sic/ centuries."[40]

The son of Jibril ibn Bokhtisho, Bokhtisho ibn Jibril (d. 870 A.D.), a Nestorian physician at the court of al-Mutawakkil, had Hunayn and his son Ishaq translate into Syriac fourteen versions of Galenic books. Bokhtisho, like his father, wanted a high quality in manuscript translating.[41]

Salmawaih ibn Bunan (d. 840 A.D.) was a Nestorian physician to al-Mutasim. Salmawaih and Hunayn were colleagues and worked together on medical translations. In 833 A.D. the physician was put into a high position by the caliph, and from that time on became one of Hunayn's patrons, the latter translating for him thirteen Galenic books into Syriac.[42]

Hunayn listed four more Nestorian patrons who served as medical practitioners, among them: Shirisho ibn Qutrub, who had Hunayn translate Greek medical work for him into Syriac when Hunayn was about twenty years; Zakariyya ibn 'Abdallah al-Taifuri and his son Isra'il ibn Zakariyya, both of whom were in service to the Caliph al-Mu'tasim and his court; and Dawud al-Mutatibbib (probably Dawad ibn Sarabuyun mentioned by al-Qifti and Ibn 'Abi Usaibi'a) for whom Hunayn

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[40] Ibid., pp. 714-718.

[41] Ibid.

[42] Ibid.

translated four Galenic books into Syriac when the latter was thirty years.[43]

Lastly, Hunayn listed 'Ali al-Fayyum for whom he translated a Greek medical work into Syriac. Dr. Meyerhof stated that Ibn Abi Usaibi'a was the only secondary source to mention any biographical information about him. 'Ali al-Fayyum was a Christian tax collector in Egypt, and upon his return to Baghdad became a courtesan and patron of the translators.[44]

FACTORS OF SELECTION

Since only one primary source, the Risalat, is available for the study of the patrons of Abbasid translators, new evidence will have to come to light before any more complete investigation could be attempted.

With the Risalat, secondary sources such as al-Fihrist, al-Qifti, Ibn Abi Usaibi'a, Ibn Khallikan, and copies of extant mss. attributed to various Abbasid translators, certain theses could be presented regarding the motives behind that patronage.

The strongest motive appears to have been a thirst for Greek medical knowledge. The Risalat listed the majority

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[43] Ibid., pp. 718-719.

[44] Ibid., p. 720.

of private patrons of Hunayn and his school to be Nestorian medical practitioners and successful physicians of Baghdad.[45] Secondly, the translations made by Hunayn's school for the physicians were in Syriac.[46]

Logical conclusions could be drawn that the Greek texts were put into Syriac for the following reasons: (1) the translators were Nestorians whose scholarly tongue at that time was Syriac, most likely a form of Estrangela script; (2) the patrons themselves were also Nestorian, trained in the academic center of Junde-Sapor, where Syriac was the most common language of instruction and communication; (3) Syriac was the only Semitic language with a substantial Greek philological influence and a word in Syriac was more likely to fit an equivalent Greek meaning than an Arabic equivalent, if one existed.

An argument could be raised that Syriac and Arabic translations from Greek texts were contemporaneous with one another. Hence, Syriac did not take precedence over Arabic translations. Even Hunayn in his Risalat said that the medical translations for the Muslim officials in the caliphal administration were in Arabic.[47] However, after studying

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[45] Ibid., pp. 717-719.

[46] Ibid., p. 713.

[47] Ibid.

the Galenic translations and lists of Hunayn's works in other fields of Greek thought, a conclusion can be made that his normal procedure was to translate the Greek text into Syriac, unless an Arabic version was needed by a governmental official. At a later time certain Syriac versions were then translated into Arabic, sometimes by Hunayn himself, but more often by his pupils, Ishaq ibn Hunayn and Hubaish.[48]

Another factor in the determination of the translating groups in Baghdad was linguistic preparedness. As a matter of academic qualification, there was really only one group in the vicinity of Baghdad who could handle the Greek texts with a fair degree of ability. That group was the Nestorians. They had worked with Greek texts earlier in their formal medical and religious training at Syriac academic centers of Edessa, Junde-Sapor, and Nisibis. Other groups such as Jacobite and Melkite Christians, as well as the pagan Sabeans, were also trained in Greek, Syriac, and Arabic. However, the Nestorians far surpassed the above named three religious groups in quantity of mss. translations, besides maintaining a high standard of translating accuracy.

A third factor, of a theological nature, in the selecting of translators did not have an origin in the Abbasid schools of Baghdad, but first resulted from interaction

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[48] Ibid., pp. 690-701; Sa'di, op. cit., pp. 423-437.

between Christian translations and Muslim theologians during the Umayyad Caliphate.

The first scholar known to have made manuscript copies from Platonic and Aristotelian texts into Syriac and Arabic was John of Damascus (A.D. 675-749). He prepared a group of doctrinal papers using Platonic thought and the dialectics of Aristotle to refute Islamic doctrines for Christians of Damascus and other parts of the eastern Christian world.[49] At the same time he provided methodical arguments for Islamic theologians in debating issues with non-Muslim groups; the former group adopting Greek methods in philosophy and logic for purposes of theological development in their doctrinal arguments.[50]

Theological investigation into the nature of Islamic doctrine grew out of a group of Muslim rationalists known as the Mu'tazilat hence Mu'tazilites, (those who secede). Their founder was a Basrite, contemporary of John of Damascus, whose name was Wasil ibn-'Ata (d. 748 A.D.). The Mu'tazilites advocated belief in the denying divine

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[49] Cross, loc. cit.; Frederic H. Chase, Jr. (trans.), Writings of St. John of Damascus (The Fathers of the Church: A New Translation. New York: Fathers of the Church, Inc., 1958), pp. xxviii-xxix.

[50] C. H. Becker, "Christliche Polemik und islamische Dogmenbildung," Zeitschrift für Dogmenbildung und verwandte Gebiete, XXVI (1912), p. 178: Neve, loc. cit.

attributes coexistant with God.[51] In defending their doctrines the Mu'tazilat assimilated Aristotelian thought, before Islam used by Christians and Manicheans in Hellenistic times in Syria, Mesopotamia, and Iran.[52] Meanwhile other philosophical schools of Islamic thought developed, some hindering, some stimulating, Mu'tazilat growth.

Over a century later under the Abbasid Caliph al-Ma'mun, the Mu'tazilite movement surged again into Islamic thinking. The caliph began to search for texts espousing reason to justify Mu'tazilite religious belief, and in order to investigate relevant Greek texts he established the Bayt al-Hikmat (House of Knowledge) where he appointed Hunayn ibn-Ishaq of Hira as its director. From the Mu'tazilat's newly acquired rational arguments rose the thought of al-Kindi (born in A.D. 870), the most important Islamic philosopher of Arab lineage during the Middle Ages.[53]

Richard Walzer, Fellow of St. Catherine's College, Oxford, stated that scholars have been uncertain if the reasons for the Abbasid caliphs encouraging translations from Greek were because of "the predominance of Mu'tazilite

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[51] Hitti, op. cit., p. 245.

[52] Cesar E. Dubler, "Das Weiterleben der Antike im Islam," Das Erbe der Antike, Fritz Wehrli, editors (Erasmus-Bibliothek, ed. Walter Rüegg. Zurich: Artemis Verlag, 1963), pp. 83-84.

[53] Ibid., pp. 85-86; Hitti, op. cit., p. 310.

movement," an individual desire for knowledge, or some other reason.[54]

The fourth known factor in selection was the political elements involved with patronage of Abbasid translators by caliphs, wazirs, provincial governors, etc. The Risalat, al-Fibrist, al-Qifti, and Ibn Abi Usaibi'a all mention political patronage. A problem existed, however, in determining the nature of the patronage. Just as difficult to determine was the separation between political and cultural factors, as most often both factors were intertwined. Most of the calips, wazirs, and other governmental officials and administrators were well-read and culturally aware of non-Arab civilizations, especially the close-by Greek and Persian. The Muslim wazirs, specifically, descendants of a Persian Buddhist priest (Barmak),[55] were quite culturally cognizant of the multi-national communities within the Sassanian Empire such as the Syrians, who possessed part of the Greek tradition at Edessa, Junde-Sapor, and Nisibis, the Indians, and the Sabeans of Harran. Yet, at the same time these officials utilized the prestige of their offices to patronize the translators. And, in return, they were able to state their responsibility in producing texts of the

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[54] Richard Walzer, "Islamic Philosophy," op. cit., p. 6.

[55] Hitti, op. cit., p. 294.

Hellenic tradition in Arabic.

Other factors stimulated by various elements were undoubtedly present in the selection process of translators. Yet primary and secondary sources did not indicate what they were. One factor related to acquisition of Greek agricultural methods, specifically geoponics, might have been another stimulus in collecting Greek texts. Yet evidence supporting this view cannot be found.

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[56] Personal correspondence of the author expressing opinion of Professor A. J. Arberry of Cambridge University, letter from Rom Landau, June 24, 1965.

CHAPTER VI

THE EFFECT OF THE TRANSMISSION

The purpose of this chapter is to refer briefly to the effects of the translations upon the Muslim world and the West (Europe). The impact of the translations upon Europe generally is common knowledge, so only brief reference is given to that topic, the transmission of Greek knowledge to Europe encouraging the development of a Renaissance.

The effects upon the Arab/Muslim world have been classed into three subjects: the immediate impact upon the culture; the impact upon the Nestorians themselves; and the impact upon other groups.

I. IMMEDIATE IMPACT UPON ARAB/MUSLIM CULTURE

The importance of the impact of the translations upon culture inside the Arab/Muslim world was evident in the stimulus and growth of various branches of knowledge, philosophy and certain sciences.

Al-Kindi, al-Farabi, and Ibn Sina, contemporaries and immediate successors of the translators, all relied upon Greek philosophy, logic, metaphysics, etc. For example, a recent Turkish scholar of the origins of Arabic and Persian philosophical terminology said that al-Kindi's vocabulary and style were formed out of a combination of works of

translators and Mu'tazilite writings.[1] The same modern Turkish scholar said that al-Farabi used Hunayn's school's terminology in philosophy.[2] Ibn Sina, the third great Muslim philosopher, based his philosophical terms upon already established forms, his main modification being precise defining of terms.[3]

One effect of the Greek texts upon the study of medicine in the Arab world was the development of the critical spirit, mainly through Galen's skeptical remarks about authority of certain Hippocratic works. Hunayn himself in the Risalat even suspected certain works ascribed to Galen. The scholarship and authority of literature were given much thought by the Arabs after the birth of analytic and critical methods of research.[4]

In historiography a hypothesis suggestive of Greco-Syriac contact with the Muslim method of writing history has been presented. Evidence points to Muslim usage of annalistic arrangement previously employed by Greeks and Syrians. Unfortunately, the historiographs of Hunayn and Qusta ibn Luqa have not been uncovered, so that an early comparison of

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[1] Afnan, op. cit., p. 43.

[2] Ibid., p. 44.

[3] Ibid., p. 45.

[4] Rosenthal, The Technique and Approach of Muslim Scholarship, op. cit., p. 48.

Muslim indebtedness of Hellenic culture could be made.[5]

Often educational instruction was based upon Greek authors and thinkers, rather than upon strict Muslim adherence to classical instruction of the Koran, the hadith, etc.[6] In the eleventh century one of the noted medical scholars involved in the Baghdad/Cairo polemic, 'Ali ibn Ridwan, expressed the statement that specialized research was overtaken by encyclopedism, such as the Kunnash, a compendium that listed physicians.[7] Perhaps the trend towards an encyclopedic outlook upon knowledge and research was the result of an accumulation of Greek thought transmitted over the centuries. However, this is pure speculation. One noted scholar who practiced the encyclopedic method of instruction was al-Jahiz of Basra, who for twenty-four years of his life studied translations of Greek authors.[8]

In other disciplines of knowledge, e.g., astronomy, mathematics, agriculture, music, etc., effects were seen upon medieval Muslim society. For example, the observatory,

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[5] _____, A History of Muslim Historiography, loc. cit.

[6] _____, The Technique and Approach of Muslim Scholarship, op. cit., pp. 53-54.

[7] Ibid., p. 60; Joseph Schacht, "Uber den Hellenismus in Baghdad und Cairo im 11. Jahrhundert," Zeitschrift der Deutschen Morgenländischen Gesellschaft, 90 (1936), p. 530.

[8] Dodge, op. cit., p. 10.

built in connection to the Bayt al-Hikmat in Baghdad, was a monument erected to the glory of Greek astronomical thought, perhaps influenced by Sabean astronomers and star-gazers. Arabic music, too, was influenced by Greek music theory and science of sound.[9]

II. IMPACT UPON NESTORIANS

The effect of the translations upon the Nestorians could only be measured in terms of what happened to the Nestorian translators themselves, after their functioning as transmitters of Greek thought to their own colleagues and their Muslim patrons. Not only did their reputations improve greatly, but they were the recipients of caliphal wealth and patronage. Their services were at a premium due to lack of other linguistically qualified men in the caliphate who were well-trained in Greek and Syriac. Gradually, the use of Syriac began to fade away as the predominance of Arabic took over, not just in religious circles, but as the language of colloquial dialect and cultural communication.

III. OTHER EFFECTS

In the body of scientific literature, the introduction of Greek writings indeed caused an important effect. Instead

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[9] H. G. Farmer, loc. cit.

of Greek, Syriac, or Persian becoming the language media for scholastic communication, Arabic overpowered any rival language within the Abbasid sphere of influence, making the tongue of the Arabs requisite for academic acceptance.[10] A comparison could be made between the scholastic[11] movements in Islam and Europe. During the 800's and 900's in the Islamic world, a scholar had to write in Arabic in order to publish intellectual literature, while in Europe in the thirteenth and fourteenth centuries, the linguistic media of academic savants were vernacular tongues of varying popularity.[12]

Two bodies, less affected by the translations than the body of scientific literature were the Persians and Sabeans.

The Persians, unlike their adjacent neighbors, the Arabs, failed to produce terminologies of their own after the commencing of Arabic translation production. In earlier times Pahlawi texts had been extant from Greek or Syriac translations, but by the period contemporary with Abbasid rule, Persians possessed only Arabic renderings from Greek or Syriac, Persian translations not occurring until modern times.[13]

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[10] Kramers, op. cit., pp. 93-94.

[11] In Arabic the scholastic movement was called kalām, referring to scholastic theology.

[12] Kramers, loc. cit.

[13] Afnan, op. cit., p. 60.

The Sabeans, of whom the two most renowned representatives were Thabit ibn Qurra and al-Battani (one of the greatest astronomers in the Islamic Empire), diminished, suppressed by the dominance of Islam. The writings of Thabit and al-Battani were mostly in Arabic. Actually, the effect of the translations on the Sabean community in Harran was very weak.

The reasons translation production ceased in the Abbasid Caliphate are dissertations in themselves. Most obvious reasons were: the collapse of the Abbasids due to corruption, decadence, and vice stopping patronage translators; the Mongol hordes entering Baghdad and destroying whatever came in their way--libraries, mss., and other book collections; the crusaders; the rise and fall of the Fatimid Caliphate; and the rise of the Ottoman Empire.[14] The last cause came quite late (1450's), but the Turks sacked Constantinople and parts of the Abbasid Empire stifling any cultural activity with which they came into contact.

IV. THE EFFECTS UPON THE WEST (EUROPE)

What was the general affect of the translated Greek heritage, extant in Syriac and Arabic, upon Europe? By the mid-eleventh century, translating bodies from Greek into

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[14] Dodge, op. cit., p. 18.

Syriac and Arabic had practically died out. The function of translating shifted from the eastern boundaries of the Mediterranean, to the more western regions bordering the Mediterranean, i.e., Spain, Sicily, and Italy. As in the days of Abbasid patronage, translators were mostly Christian of the Syriac communion, so in the west in the eleventh and twelfth centuries, the translators were again Christians and Jews. However, the translators of the second period were members of the Roman Catholic community, rather than Nestorian, Jacobite, or Melkite.

By the end of the thirteenth century, European scholars had come into contact with Arabist "texts," not translations from the Greek and Syriac, but original treatises by Arab intellectuals in philosophy, theology, medicine, mathematics, and natural science. Gradually works were superseded by original Greek translations and other works inspired by the European Renaissance.[15]

Yet, prior to the transition to translations from the original Greek two major translating bodies began to flourish: the first in Moorish Spain, and the second in the regions of Italy.

The first transmitter of the Greek, hence Arab, tradition in the west was the scholar John of Gorz, a

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[15]D. M. Dunlop, "Arabic Science in the West," Journal of the Pakistan Historical Society, V. (1957), p. 3.

Lotharingian cleric, who brought mss. of Aristotle and Porphyry from lower Italy to Germany and Cordoba in the latter half of the tenth century.[16] Exactly how thoroughly John knew Arabic is not known. Through his contact with Lorraine in west-central German territory, one twentieth century commentator has remarked that:

> While we lack positive evidenee /sic/ of the pursuit of Arabic science in the schools of Lorraine in the years immediately following John of Gorz's return from Spain, the constructive evidence points to it and inverse reasoning affirms it... I am convinced that the schools of Lorraine in the last half of the tenth century were the seedplot in which the seeds of Arabic science first germinated in Latin Europe, from which knowledge radiated to other parts of Germany...to France, and especially into England.[17]

In Moorish Spain Arabic was spoken in the Umayyad Emirate, also in the northern Christian sector of Spain, Arabic was written and spoken. Even Latin scriptures and other religious materials were translated into Arabic.[18]

The first known translations of Greek medical works from the Arabic to Latin were made by Constantinus Africanus of Carthage who lived in the eleventh century. Constantinus traveled in North Africa and the eastern Mediterranean learning Arabic. He then settled in Salerno and the

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[16] Ibid., pp. 8-10.

[17] James Westfall Thompson, "The Introduction of Arabic Science into Lorraine in the Tenth Century," Isis, XII (1929), p. 191.

[18] Dunlop, "Arabic Science in the West," op. cit., p. 14.

Benedictine monastery at Monte Cassino, translating Hippocratic and Galenic writings, besides medical works of famous Arab doctors. Certain translations made by Hunayn and Yuhanna Masawayh were said to have been translated by Constantinus, who died in the late part of the eleventh century. To him was accredited the first medical translations into Latin in Europe.[19]

Earlier translations were said to have been made between the time of John of Gorz and Constantinus Africanus. However, evidence regarding the translations' authority was not very reliable.[20]

During the twelfth century many prominent translators were known mainly working in Toledo. The nationalities of these men varied, from English, Scottish, Italian, and Spanish.

One of these men was Adelard of Bath, a Benedictine, who traveled to Greece and Asia from Salerno, where he learned Arabic. Most of his translations into Latin were of mathematical and astronomical works.[21]

In the mid-twelfth century two Italians translated in

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[19] Suter, Die Araber als Vermittler der Wissenschaften..., op. cit., p. 18; Dunlop, "Arabic Science in the West," op. cit., p. 21.

[20] Ibid., pp. 18-20.

[21] Suter, Die Araber als Vermittler der Wissenschaften..., loc. cit.

Toledo. One was Dominico Gundisalvi, Archdeacon of Toledo, who set up a school of translators under the patronage of Raymond, Archbishop of Toledo. Actually neither of the two Christian ecclesiastics knew Arabic. The one man they hired to work with Arabic translations was a Jewish scholar, Ibn Da'ud, also known as Johannes Hispalensis, who translated from Arabic into the vulgar Castilian dialect. Gundisalvi was known to have translated into Latin, perhaps from Castilian.[22] The second famous Italian translator who resided in Toledo was Gerard of Cremona (d. 1187), a scholar who handled the works of Themistius, Alexander of Aphrodisias, Euclid, Archimedes, Galen, Hippocrates, Aristotle, and Ptolemy. Gerard also worked with translations from Muslim writers, e.g., Ibn Sina, al-Razi, and al-Farabi. A contemporary of Gerard's was Plato of Tivoli of whom little was known.[23]

One of the representative translators of the thirteenth century who worked with Arabic translations was Michael Scot, the first Scottish "Arabist," whose life and legend are known to many disciplines: philosophy, astrology, and magic. Of concern to this thesis were his translations from Arabic into Latin, done in Toledo during the middle years of the

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[22] Ibid., p. 19.

[23] Ibid., p. 20; Dunlop, "Arabic Science in the West," op. cit., p. 21.

1200's. Scot is known mainly in the field of translations for the rendering of many Aristotelian works into Latin.[24]

Another translator, a later contemporary of Michael Scot, was Hermannus Alemannus, who prepared both Latin translations of Arabic and commentaries of writers in Arabic, i.e., Ibn Rushd. Hermannus was known to have lived around 1240 in Toledo.[25]

The later period of Albertus Magnus in Europe ended the real translation period into Latin from Greek texts, and began the era of Latin commentaries and new editions of the Greeks and Arab writers.[26]

The Paduan school of scholasticism where Peter of Abano flourished in the thirteenth century did not work with Arabic texts, but handled primarily translations from Greek into Latin and vice versa. Peter retraced the steps of the early Hunayn expeditions into what was then Constantinople to retrieve ms. copies of Greek works. However, he worked on few mss. of this type. Peter translated into Latin works of Hunayn ibn Ishaq and Yuhanna ibn

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[24] Ibid., pp. 77-99.

[25] Ibid., p. 90; Suter, Die Araber als Vermittler der Wissenschaften..., op. cit., p. 21.

[26] Dunlop, "Arabic Science in the West," op. cit., pp. 129-150.

Masawayh.[27] The Paduan school took the Arab legacy, and instead of emphasizing Aristotelian thought as earlier schools had done, it taught the philosophy of Ibn Rushd.

By this period of the fourteenth century, Arabic translations had been translated at the schools in Toledo, Salerno, and Cordoba. The Latin tradition of transmitting Greek thought to Europe began the rebirth of the continent through Greek and Latin classicism, only a century before extant in Arabic, and only three centuries earlier existent in Syriac.

The long term effect of the first transmission to early Arab civilization through Syriac and Arabic upon the face of Europe, enlivened the spirit of the Renaissance, giving Dante Alighieri, Thomas Aquinas, Roger Bacon, and many other scholastics and humanists the source material to perfect writings of classical beauty, so that when La Divina commedia and Summa theologica were read the cumulative philosophical thought that had passed from the Greeks to the Arabs, and finally to Europeans could be justly appreciated.

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[27] Ibid., pp. 202 and 206.

CHAPTER VII

SUMMARY AND CONCLUSION

An attempt to show the transmission of a limited body of Greek thought to early Arab civilization through the Syriac and Arabic languages has been made. The study has concentrated upon modern sources of research since the latter part of the nineteenth century, when publication on this topic began to flourish in western languages. As has been seen, modern sources existed as early as the eighteenth and first part of the nineteenth centuries. However, the revision of the first findings have been edited and re-edited since that time, so that little reference back to the first publications needs to be made.

I. THE MEDIA OF TRANSMISSION

The analysis of the media of transmission, the Syriac and Arabic languages, from linguistic and historical points of view was undertaken in Chapter II. The relation of Syriac and Arabic to other Semitic languages was shown as well as the histories of the Syriac and Arabic-speaking peoples of Syria and Iraq up to the end of the major period of translation in the tenth and eleventh centuries. The main purpose of the linguistic and historical analyses was to acquaint the reader with the natures of the two Semitic

languages, besides laying a foundation for the growing importance of the selected translating bodies in early Arab civilization through modern research. Generally speaking, Chapter II answered the question: What media performed the transmission?

II. THE TRANSMITTED KNOWLEDGE

The body of knowledge transmitted to the early Arabs from Hellenic culture was the subject for Chapter III. Since the purpose of the study was not to emphasize what was transmitted, rather to investigate why the transmission occurred and who transmitted the knowledge, less attention was placed upon the development of the chapter. The significant study of what was transmitted was more the concern of classicists and historians of Greece, rather than the responsibility of Arabists who are normally not linguistically qualified to study the content of the transmission in its original language. This does not mean that Arab medieval historians should not learn Greek, but pragmatically speaking, few Arab historians are also experts in Greek. Future medievalists of Arab history should most definitely learn Greek, Syriac, and Arabic, if they are to analyze the qualitative content and translation of newly found mss. of the medieval period. The same could be said of specialists in the later translating periods who should certainly know

Greek, Latin, and perhaps Castilian, as well as Arabic.

The content of Greek thought transmitted to the early Arabs is still being uncovered. Historians surmise that much of the transmission extant in ms. form by the tenth and eleventh centuries was destroyed, burned, or hidden. The last category is the only hope for twentieth-century medievalists of Arab history to reconstruct the body of knowledge transmitted. Another task confronting medieval historians is the careful editing of Syriac and Arabic texts, comparing them with an extant Greek original in such a way as to compare the form and style of technical terms in Greek with equivalent meanings in Syriac and Arabic, So far, no field translated can boast an existent, competent, thorough glossary of terms.[1]

III. THE TRANSLATORS

Where Chapter III discussed what was transmitted, Chapter IV listed the Syriac and Arabic translators. No differentiation was made separating Syriac from Arabic translators, as most often, after the advent of Islam, Greek texts were translated in either Syriac or Arabic, sometimes both.

Of course in the pre-Islamic period, Syriac translations from Greek were prevalent. After Abbasid domination,

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[1]Afnan, op. cit., pp. 48-49.

Arabic translations began to overtake Syriac ms. production. However, the background of the patron requesting the translation during the days of the Baghdadi school of translators determined the language of the translation.

The organization of Chapter IV showed the Syriac and Arabic translating bodies until the 1000's, classed by chronological development. The first section dealt with the Syriac translators before Islam, co-terminous with the Jahiliyah period. The second section concentrated upon the pre-Hunayn school of translators, from the beginning of Islam to the Caliph al-Mutawakkil, under whose reign Hunayn reached the height of his activity. No evidence existed of translations into Arabic during the Rashidun period. The first Arabic translations from the Greek or Syriac occurred during the Umayyad reign. With the Abbasids came the thirst for Hellenic knowledge and translating activity reached its peak.

The third section of Chapter IV emphasized the school of translation directed by the Nestorian physician Hunayn ibn Ishaq, during the mid-ninth century at the Bayt al-Hikmat in Baghdad. The life, translation works, and style of Hunayn were discussed; his original writings briefly referred to. The life and translations of his major and minor pupils were mentioned, as well as his contemporaries; among the most illustrious was Thabit ibn Qurra, a Sabean from Harran.

The last section of Chapter IV dealt with the post-Hunayn translators, who failed to keep the Nestorian tradition of Syriac-speaking translators, and instead Jacobite and Melkite Christian translators became the vogue. The most renowned of the last body was Qusta ibn Luqa, who translated in Baghdad for a good part of his life, but who later resided in Armenia, a member of the Armenian prince's court, until Qusta's death in the early tenth century. After Qusta, translations dwindled and practically came to a stand-still by the early eleventh century.

The end of the main translation period, made famous by the Baghdadi school, drew to a close in the early 1000's, never to be revived again.

IV. THE REASONS FOR THE TRANSMISSION

The selection of Nestorian translators under Abbasid patronage was the topic for Chapter V. The discussion of finding primary sources was included. Until more searching for proved correspondence of the translators is initiated, primary source material is almost non-existent, except for the Risalat of Hunayn and its extension edited by Bergsträsser.

The patrons of the Nestorian translators were classed into two groups: public officials for whom translations were done from Greek or Syriac to Arabic; and private individuals,

mostly Nestorian colleagues and physician-friends of the translators, for whom translations were made from Greek to Syriac. The patrons who were from public office were caliphs, their wazirs, governors, and other miscellaneous officials. Patrons of the private category included Nestorian physicians in Baghdad, trained at Junde-Sapor, some of whom were teachers of the translators.

In determining the factors of selection, the following conclusions were made from the evidence based upon the Risalat and the secondary sources. No clear-cut factors, separate from one another, were evident. One factor was determinant upon another and vice versa. However, in trying to arrange a list of factors, some separation had to be made, and the following conclusions were drawn.

Medical knowledge. The thirst for medical knowledge appeared to have been the strongest factor in the selection of translators, especially for the Nestorian patrons. An argument could be raised against the point that certain public officials requested Hunayn and his school to translate a small amount of medical texts. However, the largest part of translated works of Galen were made into Syriac versions for Nestorian doctors who were patrons.

Linguistic preparedness. The linguistic preparedness of the Nestorian translators constituting the second factor,

seemed to make them more qualified than any other group to handle the demand for ms. translation into Syriac and Arabic from the Greek. Other bodies, such as the Jacobites, Sabeans, and Melkite Christians, also were trained to a certain degree in the three major required languages for translating. But the record held by the Nestorians for producing the largest bulk of ms. translations and maintaining the greatest degree of translating accuracy, surpassed the available records of Jacobites, Melkites, and Sabeans in the same two categories.

The Mu'tazilites. The third factor was the Caliph al-Ma'mun's Mu'tazilite revival which led to searching for Greek philosophical and theological texts, first consulted by John of Damascus, over a century earlier in an attempt to present arguments against non-orthodox religious groups, e.g., the Muslims and Nestorians alike. The search for these mss. by the Nestorians in the ninth century, took them to the Byzantine Empire, where they collected what Greek sources were available and returned home to work on their translations. After the search and translations were completed, the Nestorians were richly rewarded for their accomplishments.

Politics. The political stature of certain patrons composed the fourth factor in the selection of Nestorian translators. By the very nature of their political and

religious offices, the officials had the power to command their subjects to perform certain functions. At the same time, a request from one of these leaders was deemed an honor. So, if a caliph (the successor of the Prophet Muhammad), a wazir (the head minister or member of the caliphal cabinet), or provincial governor requested translations to be made, the selected translator would be responsible to render the service asked by the public official. Christians and Sabeans, among other groups at the time of the Abbasids were considered "People of the Book" (Ahl al-Dhimmat), and personally protected by the caliph. The Nestorians in the ninth and tenth centuries were active in Baghdad, having a patriarch, besides special living quarters inside the city's limits. The animosity between the Nestorians and Jacobites at that time was prevalent.[2] An assumption could be made that any caliphal patronage favoring Nestorians would be most welcomed.

Other factors. Other factors affecting the selection of Nestorian translators were probably present. An agricultural factor has been suggested;[3] however, proof of its

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[2]Hitti, op. cit., pp. 355-356, citing Yāqūt, Buldān, Vol. II, p. 662; Assemani (al-Samlani), Bibliotheca orientalis, Vol. II (Rome, 1721), no. page listed.

[3]Personal correspondence of the author, letter from Rom Landau giving writer suggestion of Professor Arthur J. Arberry, June 24, 1965.

validity has not been uncovered. Further investigation discovering evidence supporting other factors of selection will have to be made before any additions to the four above-mentioned factors can be appended. Thus, the "why" of the transmission of Greek thought to the early Arabs has been answered.

V. EFFECTS OF THE TRANSMISSION

The immediate effects of the transmission upon the Muslim world and the west (Europe) were discussed in Chapter VI. The impact of the translations upon Arab/Muslim culture immediately after Syriac and/or Arabic versions were placed at the disposal of intellectuals gave stimuli to the growth of various branches of knowledge, e.g., philosophy, mathematics, astronomy, and medicine.

Other groups were affected by the impact of the translations from the Greek in varying ways. The Nestorian translators at first flourished under the acclaim and prestige given them by their patrons because of the excellence of their work. But, by the eleventh century, translations ceased to be made by the Baghdadi school. Syriac lost its popularity as a language of the scholarly elite and was replaced entirely by Arabic. After the Sabeans lost their two most famous representatives, Thabit ibn Qurra and al-Battani, the star-worshipping sect showed little cultural

activity. The Persians too, like the Sabeans failed to keep up with Syriac or Arabic translations.

The greatest effect within the Abbasid sphere of influence, other than the growth of fields of knowledge derived from Greek thought, was the use of Arabic as scientific jargon, the lingua franca among scholars. Greek, Syriac, and Persian gradually were no longer spoken among Arab and Muslim intellectuals, as Arabic ruled supreme.

The effect of the transmission upon European soil led to the establishment of translating bodies, similar in function to the Abbasid translators, only located around the northern and western rims of the Mediterranean. First Spain, then Sicily, and Italy housed the translating centers, where Arabic mss. from the Greek were put into Latin by Jewish translators and by Christians in communion with Rome. By the end of the 1200's European scholars were in contact with Arabist texts, which had come through the Pyrenees from Toledo and Cordoba to Lorraine, and from southern Italy, particularly Salerno, to Padua. The men who worked on the Arabic translations into Latin were of varied European and African ethnic backgrounds, such as John of Gorz, Constantinus Africanus, Adelard of Bath, Ibn Da'ud, Michael Scotus, and Hermannus Alemannus.

After the late thirteenth century, translating from Arabic into Latin began to die out in Italy and Moorish Spain.

With the transmission of Greek thought to the early Arabs and Muslims by the language media of Syriac and Arabic, a continual process commenced carrying the classical Greek heritage from the translating center of Baghdad to Moorish Toledo and Cordoba, then to Salerno and Palermo, where the tradition was transferred to Latin translations, which became prevalent spilling over into central, continental Europe, giving impetus to the making of the Renaissance.

This study has touched only upon the great transmission of Hellenic culture to the Middle East, North Africa, and hence Europe. Much headway has been made in modern times by western scholars in uncovering the facts of this transmission (evident in Appendix I), yet an immense task still lies ahead for Arabists, medievalists, orientalists, and classicists to coordinate the knowledge already published.

VI. THE NEED AND RECOMMENDATION FOR PLAN OF COORDINATED EFFORT

The historical research sources related to the roles Syriac and Arabic played in transmitting Greek knowledge to the early Arabs has only begun partly to be available to modern scholars since the mid-1800's. The study of the transmission concerns the interest of not just the Arabist, but of the Greek classicist, orientalist, medievalist, and historians of the history of science, too, all of whom are

becoming aware of the tremendous legacy passed down from the Greeks through the Semitic language translators.

As yet, stumbling blocks prevent the smooth acquisition of this knowledge, the obstacles being primarily the lack of accurate research tools. First on the list of needed tools is a thorough glossary or dictionary of Greek/Syriac/Arabic terms in the various fields of science and the humanities.[4] The lack of such a tool reflects the lack of tri-lingual scholars who can comprehend the terminology and transmit it in clear, precise words. Also a need exists for scholars with well-prepared backgrounds in Greek thought, as well as Syriac and Arabic medicine, philosophy, mathematics, etc.

To make the sad state of relative inactivity in either above category a thing of the past, hence advocating tri-lingual scholars and tri-field specialist-historians, the following plan is suggested, not in detailed form, but in a general plan of coordinated effort between tri-linguistics and Greek/Syriac/Arab subject specialists.

The plan is not an attempt to present inflexible points, but only to make suggested recommendations for the possible implementation of a new field of academic study.

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[4]Walzer, "Islamic Philosophy, On the Legacy of the Classics in the Islamic World, The Arabic Translations of Aristotle," Greek into Arabic, op. cit., pp. 8, 33-34, and 80-81, respectively.

VII. PLAN OF COORDINATED EFFORT

The new field of historical endeavor might be formed from elements of classical, Arab, and medieval studies, preceding the instigation of a plan of coordinated effort. The linguistic foundation for the new field might include Greek, Syriac, Arabic forming the required languages, with electives in Hebrew and Persian in order to tackle original sources of Greek thought with their translations. Latin, Spanish (Castilian), and other European languages might be omitted as they constitute the linguistic background of the later translating bodies.

Another requirement for this new field of study is the need for glossaries in specific fields, e.g., medicine, philosophy, mathematics, and astronomy, divided into sections for Greek, Syriac, and Arabic. Varying linguistic combinations of these glossaries, Greek/Syriac-Syriac/Greek, Greek/Arabic-Arabic/Greek, Syriac/Arabic-Arabic/Syriac need to be prepared from texts and mss. of classical and medieval times using terminologies of these times derived from an a posteriori method, rather than word for word translation.

A possible way to implement the coordination in various fields of medieval and classical studies to produce glossaries, lexicographies, dictionaries, etc. would be to form teams of linguists working with subject specialists to

prepare various glossaries. For example, a person trained in Greek, Syriac, and Arabic would work with a medically-trained man, well-educated in the classical and medieval histories of medicine. Together the two men would handle a Galenic translation, extant in Greek, Syriac, and hopefully enough, Arabic. From terminologies used in the mss., equivalent meanings of one term in the three languages would be sorted from an a posteriori method. Such a method might, for example, involve the textual comprehension of a Galenic ms. Secondly, from the understanding of Galen's phrases and sentences in Greek, the meaning of the entire phrase would be translated from equivalent meanings special to Syriac or Arabic. In other words, the word for word method, would be exchanged for a more sophisticated one.

After the two qualified men sorted out the meanings, they would submit their findings to a central body which would produce the glossary.

The same type of scholarly investigation would be duplicated in other fields of study with teams of linguists and subject specialists producing relevant glossaries.

Eventually, over a period of years, all the Greek material extant, that is mainly the translations into Syriac and Arabic by Hunayn and his school, would be compiled into a series of volumes, classed by ancient (Greek) field of study, e.g., medicine, philosophy, mathematics and astronomy.

During the process of compiling these glossaries, libraries, museums, and mosques holding required mss. in Greek, Syriac, and Arabic would no doubt be willing to send photo-reproductions of specific ms. items upon request. For libraries, museums, and mosques without microfilming equipment, a cooperative agreement with the UNESCO micro-filming unit might be arranged, which would permit photo-reproducing of ms. collections. The execution of the coordinated plan might be achieved through a centralized agency with certain characteristics, such as:

(1) having central location between collections of ms. resources, contained in Middle East, North, Africa, Europe, and the British Isles;

(2) having proper facilities, such as an university or research library already possessing a good collection of mss. in the field;

(3) having properly qualified staff with language experts, besides members of classical, medieval, and Arab studies professions;

(4) holding files recording progress and whereabouts of current translating activities of texts leading to glossary production;

(5) editing and publishing the glossaries, the function of which might be done in agreement with an university press connected with the centralized agency, if on university premises, or if not, in agreement with a renowned publisher in the field;

(6) issuing a periodical at regular intervals sent to university departments of Arab studies, medieval studies, classics, and schools of apecialization, e.g., medicine, mathematics, on recent progress in the field.

The justification for the suggested plan was partially stimulated from the previous plans of the Académie Internationale d'Histoire des Sciences, The International Congress of Orientalists, and the Congrès de Philosophie Médiévale.[5]

The implementation of the new field of studies would result from the coordinated effort of the three fields of study (Classics, Arab Civilization, and Medieval History) producing glossaries which would clarify the transmission of Greek texts to Syriac and Arabic-speaking translators, invaluably aiding the comprehension of western culture.

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[5] Vide Appendix I, p. 1.

ANNOTATED LIST OF REFERENCES CONSULTED

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A. BOOKS AND GOVERNMENT PUBLICATIONS

*Afnan, Soheil M. Philosophical Terminology in Arabic and Persian. Leiden: E. J. Brill, 1964.
Most recent source in English dealing with translators and their backgrounds. Well-documented. Written by Turkish scholar. Includes analysis of philosophical roots from Greek into Arabic and Persian.

*Arnold, Thomas, and Alfred Guillaume (eds.) The Legacy of Islam. Oxford: Clarendon Press, 1933.
A collection of articles written by European scholars on the Islamic legacy to Europe, edited by two Arabists.

*Baumstark, Anton, and Adolf Rücker. "Die aramäische und syrische Literatur," Semitistik. Handbuch der Orientalistik, ed. Bertold Spuler. Vol. III, Pts. 2-3. Leiden: E. J. Brill, 1954.
Major value of work is that Rücker updates Baumstark's classic, the Handbuch including literature from 1922 to late 1940's.

*Baumstark, Anton. Geschichte der syrischen Literatur mit Ausschluss der christlich-palästinensischen Texte. Bonn: A. Marcus & E. Webers Verlag, 1922.
Contains complete history of literature of Syriac-speaking peoples up to and after the first millennium A.D. divided by religious sect. Includes detailed list of references in footnotes.

Bergsträsser, Gotthelf. Ḥunain ibn Isḥāq über die syrischen und arabischen Galen-Übersetzungen. Abhandlungen für die Kunde des Morganlandes, Vol. XVII, No. 2. Leipzig: /Deutsche Morganländische Gesellschaft/ in Kommission bei F. A. Brockhaus, 1925.
Contains Arabic version of Hunayn's Risalat to the Wazir Ali ibn Yahya with its German translation. Primary source information.

_____. Neue Materialien zu Ḥunain ibn Isḥāq's Galen-Bibliographie. Abhandlungen für die Kunde des

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Asterisk * refers to entry's containing bibliography and/or detailed footnotes.

Morgenlandes, Vol. XIX, No. 2. Leipzig: Deutsche Morgenländische Gesellschaft in Kommission bei F. A. Brockhaus, 1932.
Dr. Bergsträsser discusses second ms. found in Aya Sophia Mosque Library containing a revision of Hunayn's Risalat. Gives Arabic version and German translation.

*Brockelmann, Carl. Geschichte der arabischen Litteratur. 2 vols. Weimar: Verlag von Emil Felber, 1898-1902.
The first bio-bibliographical listing by Dr. Brockelmann on Arabic literature including a short section on "Die Übersetzer."

*_____. Geschichte der arabischen Litteratur, Erster Supplementband. Leiden: E. J. Brill, 1937.
First supplementary volume of a three volume work continuing bio-bibliographical listing by Dr. Brockelmann. Section on "Die Übersetzer."

*_____. Geschichte der arabischen Litteratur, Zweite den Supplementbänden angepasste Auflage. 3 vols. Leiden: E. J. Brill, 1943-1949.
Second supplementary set published in continuing frequency, begun year after last volume of first supplementary set was completed. Chapter in Vol. I on "Die Übersetzer."

*Carmody, Francis. The Astronomical Works of Thabit B. Qurra. Berkeley, California: University of California Press, 1960.
To writer's knowledge, Carmody's work is most up-to-date and comprehensive book dealing with Thabit's works on astronomy.

Chase, Frederic H., Jr. (trans.) Writings of St. John of Damascus. The Fathers of the Church: A New Translation. New York: Fathers of the Church, Inc., 1958.
Contains writings of St. John of Damascus, besides his biography.

*Cohen, Claude (ed.) Jean Sauvaget's Introduction to the History of the Muslim East: A Bibliographical Guide Based on the Second Edition. Berkeley, California: University of California Press, 1965.
The first translation in English of the guide to the literature on the history of the eastern part of the Muslim world in annotated form. Includes keys to locate primary and secondary sources.

Clagett, Marshall. Archimedes in the Middle Ages. Vol. I of The Arabo-Latin Tradition. Madison, Wisconsin: University of Wisconsin Press, 1964-
Makes brief reference to Banu Musa and Thabit ibn Qurra. Concentrates upon Latin translations.

*Cross, F. L. The Oxford Dictionary of the Christian Church. London: Oxford University Press, 1957.
Has entries on Syrian Christianity's branches, besides articles on leaders within these Christian sects.

*Dodge, Bayard. Muslim Education in Medieval Islam. Washington D.C.: Middle East Institute, 1962.
Short, but thorough account of the development of Islamic education in the Middle Ages. Concentrates mainly on education curriculum.

*Dubler, Cesar E. "Das Weiterleben der Antike im Islam," Das Erbe der Antike, ed. Fritz Wehrli. Erasmus-Bibliothek, ed. Walter Ruegg. Zurich: Artemis Verlag, 1963, pp. 79-94.
Generally discusses Greek thought in Muslim civilization from 8th-14th centuries. Briefly mentions translation period at Baghdad.

*Festschrift zum achtzigsten Geburtstag /zu/ Moritz Steinschneider. Leipzig: Otto Harrassowitz, 1896.
Multilingual essays dedicated to Steinschneider dealing mainly with scholarly Hebraic subjects. Lists a complete bibliography of his works printed in English.

*Gardthausen, Viktor. Das Buchwesen im Altertum und im byzantinischen Mittelalter. Vol. I. of Griechische Palaeographie. Edited by Viktor Gardthausen. 2 vols. Second edition. Leipzig: Verlag von Viet & Comp., 1911-1913.
Discusses history of description of books from classical times through the Byzantine Empire. Gives physical description of papyrus, parchment, and paper during the period covered.

*Gray, Louis H. Introduction to Semitic Comparative Linguistics. Columbia University Studies in Comparative Linguistics, ed. Louis H. Gray. Morningside Heights, New York: Columbia University Press, 1934.
An application of linguistic principles of Indo-European languages to Semitics, with major emphasis upon Hebrew and Arabic, and little information upon Syriac.

Hanna, Sami A., and Naguib Greis. Writing Arabic: A Linguistic Approach: From Sounds to Script. Salt Lake City, Utah: Middle East Center, 1965.
Gives beginning student of Arabic a reading and writing system of the language.

Hatch, William Henry Paine. An Album of Dated Syriac Manuscripts. Monumenta palaeographica vetera. Boston: American Academy of Arts and Sciences, 1946.
Lists facsimiles and descriptions of every dated Syriac codex from the 10th to the 16th century in various Syriac scripts found by Dr. Hatch in an attempt to form basis of a text in Syriac paleography.

*Hitti, Philip K. History of the Arabs from the Earliest Times to the Present. Seventh edition. London: Macmillan & Co., Ltd., 1960.
Documented history of the Arabs in English with sections on translators, patrons, and good surveys of Umayyads and Abbasids.

*Hutchinson, Enoch (trans.). Uhlemann's Syriac Grammar Translated from the German...with a Course of Exercises in Syriac Grammar and a Chrestomathy and Brief Lexicon. New York: D. Appleton & Co., 1855.
Short history of the language, literature, elements, parts of speech, and syntax of Syriac.

Ibn Abi Uṣaybi'ah. Kitāb 'Uyūn al-Anbā' fi Ṭabaqāt al-Atibbā'.... Edited by August Müller. 2 vols. [Cairo] al-Maṭbi'at al-Wahhabiyyat, 1882.
Arabic text and index of critical edition of the histories of the physicians in Greece and the rest of the Middle East until late Middle Ages.

Ibn Khallikān. Ibn Khallikān's Biographical Dictionary. Trans. Bn. MacGuckin de Slane. 4 vols. New York: Johnson Reprint Corporation, ©1842-71, reprint 1961.
Concentrates on figures in Islamic civil and literary history. Translated into English for non-Arabic-speaking students.

*Joseph, John. The Nestorians and Their Muslim Neighbors: A Study of Western Influence on Their Relations. Princeton Oriental Studies, 20, Princeton, New Jersey: Princeton University Press, 1961.
A modern history of the Nestorians, emphasizing history of the last two centuries. Brief reference is made to their origins. Lists good bibliography on contemporary and modern Nestorian history.

Kutsch, Wilhelm. Tābit B. Qurra's arabische Übersetzung /of the Arithmetica introductio/ des Nikomachus von Gerasa zum ersten Mal herausgegeben. L'Institut de Lettres Orientales de Beyrouth. Recherches, t. IX. Beirut: Imprimerie Catholique, 1958.

In Greek and Arabic, contains Qurra's Arabic translation of work by Nikomachos of Gerasa, a Pythagorean. Includes Greek/Arabic, Arabic/Greek vocabularies.

Kramers, J. H. "Science in Islamic Civilization," Analecta orientalia: Posthumous Writings and Selected Minor Works of J. H. Kramers. Vol. II. Leiden: E. J. Brill, 1956, pp. 74-148.

Surveys history of science in the Islamic world from late Umayyad days through Abbasids, briefly referring to post-Baghdadi development.

*Landau, Rom. Islam and the Arabs. London: George Allen & Unwin, Ltd., 1958.

Survey of Islam and the Arabs for the general reader, layman, and university student. Includes compendium of chapter's subject in table form at end of each chapter.

Leclerc, Lucien. Histoire de la médecine arabe. 2 vols. Burt Franklin Research & Source Works Series, No. 18. New York: Burt Franklin, 1876.

"Exposé complet des traductions du grec" and "les sciences en orient leur transmission a l'occident par les traductions latines." Includes commentary on Greek authors transmitted and work of Abbasid translators. Arabists consider it classic in its field.

Lyons, Malcolm. Galeni in Hippocratis de officina medici commentariorum. Corpus medicorum Graecorum. Supplementum orientale, No. 1. Berolini: In aedibus Academiae Scientiarum, 1963.

Contains Arabic translation of work taken from three mss. with parallel English translation. Has glossary of Arabic/Greek and Greek/Arabic terms.

Meyerhof, Max. The Book of the Ten Treatises on the Eye Ascribed to Ḥunain ibn Is-ḥāq (809-877 A.D.): The Earliest Existing Systematic Text-Book of Ophthalmology. Cairo: Government Press, 1928.

Contains good biographical material on Hunayn in English, besides discussing the authority of the work to Hunayn.

*Moscati, Sabatino (ed.). An Introduction to the Comparative Grammar of the Semitic Languages: Phonology and Morphology. New series, Vol. VI of Porta linguarum orientalium. Edited by Bertold Spuler and Hans Wehr. Wiesbaden: Otto Harrassowitz, 1964.

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Famous index of Arabic book titles compiled by librarian and bookman of the tenth century.

*Nakosteen, Mehdi. History of Islamic Origins of Western Education A.D. 800-1350 With an Introduction to Medieval Muslim Education. Boulder, Colorado: University of Colorado Press, 1964.

Contains chapter on classical foundations of Muslim education with a good section of the school at Jundeshapor. Appendices list partial translations from Greek, Arabic, and Persian into various Semitic and European languages.

*O'Leary, De Lacy. Arabic Thought and Its Place in History. Trubner's Oriental Series. London: Routledge & Kegan Paul Ltd., 1954.

Short survey of transmission of Greek thought through Muslim and Jewish philosophers and thinkers to Latin scholastics in the Christian Church. Has two chapters on Syriac Christians.

_____. How Greek Science Passed to the Arabs. London: Routledge & Kegan Paul Ltds., 1957.

Traces three channels of transmission of Greek science to the Arabs. One chapter lists major and minor translators.

*Pearson, J. D. Index Islamicus 1906-1955: A Catalogue of Articles on Islamic Subjects in Periodicals and Other Collective Publications. Cambridge, England: W. Heffer & Sons Ltd. /1958/ Supplement: 1956-1960. Cambridge, England: W. Heffer & Sons Ltd., 1962.

Major bibliographic source for periodical articles and other collective materials in English, inclusive from 1906-1960. Good classed arrangement, only has author index. Includes "Transmission of Greek and Latin science to the Arabs, Transmission of Arabic science to the West," besides bibliographies on the separate translators and individual sciences in western languages.

*Plato. Plato Arabus. Edited by Richard Walzer, et al. 3 vols. Corpus Platonicum medii aevi. London: In aedibus Institute Warburgiani, 1943-1953.
Contains Latin and Arabic versions of Galeni compendium Timaei Platonis, De Platonis philosophia and Compendium legum Platonis by al-Farabi. Greek/Arabic, Arabic/Greek indices.

Al-Qifṭi. Tarīkh al-Hukama'. Edited by Julius Lippert. Leipzig: /n.n./, 1903.
The noted history of knowledge by the renowned Arab scholar of the 1200's.

Rabin, Chaim. Ancient-West Arabian. London: Taylor's Foreign Press, 1951.
Presents new theory of first origins of Arabic through dialectal analyses.

*Rescher, Nicholas. The Development of Arabic Logic. /Pittsburgh, Pennsylvania/: University of Pittsburgh Press, 1964.
A result of a NSF grant "to pursue an investigation of Arabic contributions to logic with a view to producing a systematic and synoptic account of its historical development."

*Rosenthal, Franz. Das Fortleben der Antike im Islam. Die Bibliothek des Morganlandes. Zurich: Artemis Verlag, 1965.
Recent book on Greek knowledge transmitted to the Islamic world during Middle Ages.

*_____. A History of Muslim Historiography. Leiden: E. J. Brill, 1952.
Promotes understanding of problems in studying Muslim historiography. Makes brief mention of major translators and their original historical writings.

*_____. The Technique and Approach of Muslim Scholarship. In Analecta orientalia: Commentationes scientificae de rebus orientis antiqui, No. 24. Rome: Pontificum Institutum Biblicum, 1947. 74pp.
Gives analytic development of Muslim scholarship in detailed form. Many references to Hunayn and his school.

*Sarton, George. From Homer to Omar Khayyam. Vol. I of the Introduction to the History of Science. 3 vols. Published for the Carnegie Institution of Washington by

Baltimore: Williams & Wilkins Co., 1927-19 .
One of the most scholarly outlines of scientific history to be written in English. Gives many references to translators of Greek texts and ms. to the Arabs.

*Sourdel, Dominique. Le Vizirat 'abbāside de 749 à 936 (132 à 324 de l'hegire). 2 vols. Damascus: Institut Français de Damas, 1959-1960.
Good chronological source for determining caliphs and wazirs.

*Steinschneider, Moritz. Die arabischen Übersetzungen aus dem Griechischen. Graz, Austria: Akademie Druck u. Verlagsanstalt, 1960 /reprint/.
Reprint of the classic source of history of Arabic translations of the Greek works first published in the 1890's.

Suter, Heinrich. Die Araber als Vermittler der Wissenschaften in deren Übergang vom Orient in den Okzident. Second edition. Aarau: H. R. Sauerländer & Co., 1897.
Concise history of the transmission of knowledge by the Arabs from the eastern part of the Mediterranean to the cultural milieus of Europe. No documentation.

U. S. Dept. of State. Transliteration Guide for Arabic, Bulgarian, Chinese.... Washington, D. C.: U. S. Dept. of State, 1961.
Has Arabic/Latin transliteration table (BGN/PCGN System) with notes and special rules for further elaboration of Arabic-Latin transliteration system.

U. S. Library of Congress. Cataloging Rules of the American Library Association and the Library of Congress, Additions and Changes, 1949-1958. Washington, D. C.: U. S. Library of Congress, 1959.
Contains special section on revised rules for cataloging Arabic materials, along with an Arabic-Latin transliteration table.

Walzer, Richard. Galen on Medical Experience: First Edition of the Arabic Version with English Translation and Notes. London: Oxford University Press, 1946 /c1944/.
Contains Arabic translation from Syriac by Hubaish from Hunayn's translation from the Greek.

*_____. Greek into Arabic: Essays on Islamic Philosophy. Oriental Studies, Vol. I, eds. S. M. Stern and Richard Walzer. Oxford: Bruno Cassirer, 1962.

A collection of reprinted periodical essays on the transmission of Greek into Arabic through works of Christian Arab translators. Comprehensive footnotes.

*Wright, William. A Short History of Syriac Literature. London: Adam & Chas. Black, 1894.
Gives general survey of all forms of Syriac literature from Biblical times to modern history. General in coverage.

Yushmanov, N. V. The Structure of the Arabic Language. Trans. Moshe Perlmann. Washington, D. C.: Center for Applied Linguistics of the Modern Language Association of America, 1961.
Translated from the Russian into English, recognized "as the best structural sketch of the Arabic language currently in existence." Briefly analyzes history of Arabic in Semitic languages.

Ziadeh, Farhat J., and R. Bayly Winder. An Introduction to Modern Arabic. Princeton, New Jersey: Princeton University Press, 1957.
Beginning modern, literary text in Arabic with chapter on brief history of the language.

B. PERIODICAL ARTICLES

Arberry, Arthur J. "An Early Arabic Translation from the Greek," Bulletin of the University of Egypt, Faculty of Arts, I (1933), pp. 48-49.
Discusses Arabic ms. translation from Greek and source material from which modern historians can construct histories of the translators.

_____. "The Nicomachean Ethics in Arabic," Bulletin of the School of Oriental and African Studies, University of London, XVII (1955), pp. 1-9.
Contains commentary in English, Greek text, Arabic version, besides a Greek/Arabic glossary taken from a ms. in the Qarawiyin Library in Fez, Morocco, dated A.D. 1232.

_____. "Some Plato in an Arabic Epitome," Islamic Quarterly, II (1955), pp. 86-99.
Analyses ms. possessed by Sir Chester Beatty of a part of an Arabic epitome of Plato's Republic by a 10th-century Arab source, whose source was a translation of Hunayn ibn Ishaq.

Anawati, G. C. "Philosophie médiévale en terre d'Islam," Institut Dominicain d'Études Orientales du Caire, Mélanges, V (1958), pp. 175-236.
Holds certain proceedings in detailed form of the Congrès de Philosophie Médiévale which met in Louvain in 1958 regarding Arab philosophy during Middle Ages.

Baudoux, Claire. "Une Édition polyglotte orientale des Éléments d'Euclide: La Version arabe d'Isḥāq et ses dérivées," Archeion: Archivio di storia del a scienza, XIX (1937), pp. 70-71.
Advocates a polyglot edition in Middle Eastern languages of Euclid's Elements.

Becker, C. H. "Christliche Polemik und islamische Dogmenbildung," Zeitschrift für Dogmenbildung und verwandte Gebiete, XXVI (1912), pp. 175-195.
Discusses relation of Theodor Abu Qurra, a Syriac writer and follower of St. John of Damascus to the 8th and 9th-century polemic between Christianity and Islam. Theodor is not to be confused with Thabit ibn Qurra, who lived later in the 9th-century.

Bessel-Hagen, E. and O. Spies. "Tābit b. Qurra's Abhandlung über einem Halbregelmässigen Vierzehnflächner," Quellen und Studien zur Geschichte der Mathematik, Astronomie, und Physik, Pt. B, Vol. II, 1932), pp. 186-198.
Contains Arabic original and German translation of a treatise by Qurra.

Carmody, Francis J. "Notes on the Astronomical Works of Thābit ibn Qurra," Isis, 46 (1955), pp. 235-242.
Discusses mss. of astronomical works of Qurra, besides mentioning reservations one must have in dealing with the certainty of his works.

Clemons, James C. "The Search for Syriac Manuscripts in America," Journal of the American Oriental Society, 85, Part II (1966), pp. 208-210.
States need for search in United States for Syriac mss.

*Dunlop, D. M. "Arabic Science in the West," Journal of the Pakistan Historical Society, V, Pts. 1-4, pp. 1-22, 77-99, 129-150, and 200-219.
Presents a historical tracing of the transmission of Greek and Arabic scientific thought to Latin Europe through centers in Cordoba, Sicily, and other parts of Europe. Emphasis is placed upon post A.D. 1000 translations.

_____. "The Translations of Al-Biṭrīq and Yaḥyā (Yuḥannā) b. Al-Biṭrīq," Akten des Vierundzwanzigsten Internationalen Orientalisten-Kongress München. Wiesbaden: Deutsche Morgenländische Gesellschaft, 1957, pp. 303-305.
Talks about translation works of two immediate predecessors of Hunayn ibn Ishaq and his school.

Fahd, T. "La Traduction arabe de L'Oneirocritica d'Artemidore D'Ephese," Arabica; Revue d'etudes arabes, VII (1960), pp. 87-89.
Comments on new ms. discovery in the University of Istanbul's Library which is an Arabic translation, attributed to Hunayn ibn Ishaq.

*Finnegan, J. "Texte arabe du Perì Noû d'Alexandre D'Aphrodise," Mélanges de L'Université Saint Joseph, XXXIII (1956), pp. 157-202.
Contains Arabic text with a commentary in French including a section on the influence of Perì Noû through the world of Arab thought. First Arabic translation done by Ishaq ibn Hunayn.

*Gabrieli, Francesco. "Estudios recientes sobre la traducción griega en la civilización musulmana," Al-Andalus: Revista de las Escuelas de Estudios Arabes de Madrid y Granada, XXIV (1959), pp. 297-318.
Italian Arabist gives an annotated bibliography on translations from the ancient Greeks in Islamic civilization. Covers late 19th century to 1957, emphasizing publications of the past two decades.

_____. "Intorno alla versione araba della Poetica di Aristotele," Rendiconti della Reale Accademia Nazionale dei Lincei, Classe di scienze morali, storiche, e filologiche, Ser. 6, Vol. V (1929), pp. 224-235.
Brief study of an Arabic translation of Aristotle's Poetics.

_____. "Un Compendio arabo delle Leggi di Platone," Revista degli studi orientali, XXIV (1949), pp. 20-24.
Short article on al-Farabi's use of Plato's Laws.

*Gabrieli, Giuseppe. "Hunáyn ibn Isháq," Isis, VI (1924), pp. 282-292.
Biographical work on Hunayn, entirely written in Italian. Gabrieli was one of the most famous Italian scholars on medieval Islam and science. Lists Hunayn's translations.

_____. "Nota biobibliografica su Qusṭā ibn Lūqā," Rendiconti della Reale Accademia dei Lincei, Classe di scienze morali, storiche, e filologiche, Ser. V, Vol. XXI (1912), pp. 341-382.
Gives one of the most complete lists of Qusta ibn Luqa's works, his biography and contemporaries.

_____. "La Risālah di Qusṭā B. Lūqā 'Sulla Differenza tra lo Spirito e L'Anima,'" Rendiconti della Reale Accademia dei Lincei, Classe di scienze morali, storiche, e filologiche, Ser. V, Vol. XIX (1910), pp. 622-655.
Gabrieli uses an Arabic ms. in the Biblioteca Ducale di Gotha to give brief introduction to Qusta's Risalat, and then presents the Arabic translation of the Risalat in an Italian translation.

*Honigmann, Ernest. "The Arabic Translations of Aratus' Phaenomena," Isis, 40 (1950), pp. 30-31.
Briefly discusses possibility and probability of the translation of Aratus' Phaenomena in the 10th century by Abu al-Taiyib Tahrir ibn al-Husain or his court astronomer Abu 'Uthman Sahl b. Bisr b. Habib b. Hani.

*Klinge, Gerhard. Die Bedeutung der syrischen Theologen als Vermittler der griechischen Philosophie an dem Islam," Zeitschrift fur Kirchengeschichte, 58 (1939), pp. 346-386.
Traces importance of Syriac-speaking Christians in transmitting Greek philosophy to Islamic civilization from the 5th century A.D. to the time of Thabit ibn Qurra.

*Kutsch, Wilhelm. "Zur Geschichte der syrisch-arabischen Übersetzungsliteratur," Orientalia, N.S., VI (1937), pp. 68-82.
Article on the history of Syriac and Arabic translation literature.

Laignel-Lavastine. "Le Rôle de l'hérésie de Nestorius dans les relations médicales entre l'orient et l'occident," Archives internationales d'histoire des sciences, XXX (1951), pp. 63-72.
Gives development of Nestorian accomplishment from time of Nestorius in 5th century through the Abbasid rule at Baghdad.

*Levi Della Vida, Giorgio. "Two Fragments of Galen in Arabic Translation," Journal of the American Oriental Society, 70 (1950), pp. 182-187.
The noted Italian Orientalist analyzses findings of Richard Walzer's discoveries of two Arabic Galenic items,

one of which can probably be traced back to Ishaq ibn Hunayn.

Lyons, Malcolm C. "An Arabic Translation of the Commentary of Themistius," Bulletin of the School of Oriental and African Studies, University of London, Vol. XVII (1955), pp. 426-435.
Contains Lyon's introductory commentary on the Arabic and Greek texts, a translation into English, and a glossary of Greek/Arabic terms all from Themistius' Commentary on the De Anima of Aristotle.

_____. "The Relations Between Greek and Arabic Philosophy and Science," Scientia: Revista de scienza, IC (1964), pp. 63-68.
General treatise on the effect of Greek philosophy and science upon the Arabs. Discusses translators and fields of knowledge Arabs took from Greeks.

Meyerhof, Max. "The 'Book of Treasure': An Early Arabic Treatise on Medicine," Isis, 14 (1930), pp. 55-76.
Discusses Thabit ibn Qurra's Book of Treasure, ascribed to the Sabean scientist, and found in Cairo in the 1930's. Includes English translation of partial contents, along with a glossary of Arabic/English medical terms.

*_____. "La Fin de L'École d'Alexandrié d'après quelques auteurs arabes," Archeion, XV (1933), pp. 1-15.
Reviews possible and probable reasons why the Alexandrian School ended according to certain Arab authors. Also relates briefly, development of scholarly thought in Middle East from early Nestorians to rise of Baghdad. Short Latin summary appended to article entitled "Fine de Schola de Alexandria secundum aliquo auctore Arabo."

*_____. "New Light on Ḥunain ibn Isḥâq," Isis, VIII (1926), pp. 685-724.
Most specific work on Hunayn's translating printed in English. Continues where Giuseppe Gabrieli and Gotthelf Bergsträsser left off.

_____. "La Version arabe d'un traité perdu de Galien," Byzantion, III (1926), pp. 413-442.
Another Arabic ms. of Galen, translated by Hunayn ibn Ishaq. With help of Dr. Schacht, Meyerhof gives a French translation and critique of Galenic work. Ms. is conserved at the University of Leiden Library, No. Or. 585 (VI).

*_____. "Les Versions syriaques et arabes des écrits galéniques," Byzantion, III (1926), pp. 33-51.
Brief and clear history of Syriac and Arabic versions of Galen until time of Hunayn, then concentrates on Hunayn and his school's work on Galenic writings.

Nève, Felix. "Saint Jean de Damas et son influence en orient sous les premiers khalifes," Revue belge et étrangère, XII (1861), pp. 1-4, 117-135.
Discusses in French the role of St. John of Damascus in transmitting Aristotelian and Platonic thought to scholars in Damascus under the Umayyads.

*Paret, Roger. "Notes bibliographiques sur quelques travaux récents consacrés aus premières traductions arabes d'oeuvres grecques," Byzantion, XXIX-XXX (1959-1960), pp. 387-446.
Annotated bibliography in prose form of first translations into Arabic of Greek philosophical works. Covers late 19th century publications to late 1950's.

Pines, S. "Une Version arabe de trois propositions de la Stoicheiōsis Theologikē de Proclus," Oriens, VIII (1955), pp. 195-203.
Discusses Arabic version of Aristū 'Inda 'L-Arab attributed to Alexander of Aphrodisias and translated from Greek into Syriac by Hunayn ibn Ishaq and into Arabic by two other Arab scholars.

*Pinto, Olga. "Le Biblioteche degli arabi nell'età degli abbassidi," La Bibliofilia: Revista di storia del libro e delle arti grafiche, XXX (1928), pp. 139-165.
Gives a short, yet concise, history of development and collapse of public and private libraries during the Middle Ages in the Arab world specifically during Abbasids.

Plessner, M. "The Cataloging of Arabic Manuscripts on Medicine and the Sciences," Archives internationales d'histoire des sciences, IX (1956), pp. 345-348.
States need for a coordinated plan of publishing catalogues of Arabic mss. in medicine and sciences, besides recommending outline for implementation of such a program through the International Congress of Orientalists.

Rosenthal, Franz. "An Ancient Commentary on the Hippocratic Oath," Bulletin of the History of Medicine, XXX (1956), pp. 52-87.

An investigation into the authorship of a commentary on the Hippocratic Oath ascribed to Galen, translated by Hunayn ibn Ishaq into Syriac, and into Arabic by Hubaish. Rosenthal concludes neither confirming nor rejecting Galen's authorship.

Ṣaghir Ḥasan, Muḥammad. "Notes on the Edition of the Kitāb al-Nafs Ascribed to Isḥāq ibn Ḥunayn," Journal of the Royal Asiatic Society, 1956, pp. 57-72.
Gives Arabic edition and Persian translation with commentary of De Anima in commentary form.

*Sa'di, Lutfi. "A Bio-Bibliographical Study of Hunayn ibn Is-haq al-Ibadi (Johannitius) (809-877 A.D.)," Bulletin of the Institute of the History of Medicine, II (1934), pp. 409-446.
Contains good biographical material on Hunayn ibn Ishaq, besides the best bibliographical listing of Hunayn's works in English to date.

Sbath, R. P. Paul. "Le Livre des Caractères de Qosṭā ibn Loūqā; Grand savant et célèbre médecin chrétien au IX^{e} siècle," Bulletin de l'Institute d'Égypte, XXIII (1941), pp. 103-169.
Contains Arabic original, French translation and commentary on Qusta ibn Luqa's Book of Characters.

_____. "Le Livre des Temps d'Ibn Massawaih médecin chrétien célèbre décédé en 857," Bulletin de l'Institute d'Égypte, XV, (1933), pp. 236-266.
Contains Arabic treatise with no translation, only a brief commentary in French.

_____. "Le Livre sur l'Eau d'Orge de Youhanna ben Massawaih grand savant et célèbre médecin chrétien mort en 857," Bulletin de l'Institute d'Égypte, XXI (1939), pp. 13-24.
Includes Arabic text with commentary and translation in French. Deals with the uses of barley water in treating illness.

_____. "L'Ouvrage géoponique d'Anatolius de Bérytos (IV^{e} siècle); Manuscrit arabe découvert," Bulletin de l'Institute d'Égypte, XIII (1931), pp. 47-54.
Lists what is known on the subject of geoponics in Greek, Syriac, Armenian, and Arabic from old sources. In French and Arabic.

Schacht, Joseph. "Über den Hellenismus in Baghdad und Cairo im 11. Jahrhundert," Zeitschrift der Deutschen Morgenländischen Gesellschaft, 90 (1936), pp. 526-545.
Explains the polemic between the Christian Ibn Butlan of Baghdad and Muslim Ibn Ridwan of Cairo in the 1000's. Gives brief biographical references to Hunayn ibn Ishaq.

Simon, Max. "Zum arabischen Galen," Zeitschrift der Deutschen Morgenländischen Gesellschaft, 63 (1909), pp. 453-456.
Early article by German Arabist on Arabic translations of Galen.

Stern, Samuel M. "Ibn al-Samh," The Journal of the Royal Asiatic Society, 1956, pp. 31-44.
Analysis of Aristotle's Physics and Rhetoric, interpreted and copied by Ibn al-Samh from the Physics translated by Ishaq ibn Hunayn.

*Suter, Heinrich. "Die Mathematiker und Astronomen der Araber und ihre Werke," Abhandlungen zur Geschichte der Mathematischen Wissenschaften mit Einschluss ihrer Anwendungen, X (1900), 278pp.
Contains 528 bio-bibliographical listings of Arab scientists, emphasizing mathematicians and astronomers, followed by an index of persons. Good reference tool except limited by lack of 20th-century information.

Thillet, P. "Notes critiques sur la théologie d'Aristote," Arabica, V (1958), pp. 56-66.
Contains tables of similarities and differences between the two editions of Aristotle's theology, the older edition by P. Kraus and the newer edition by the Egyptian 'Abd al-Rahman Badawi.

Thompson, James Westfall. "The Introduction of Arabic Science into Lorraine in the Tenth Century," Isis, XII (1929), pp. 184-193.
Shows transmission of Arab science beyond the Pyrenees into Christian Europe in the 900's. Emphasizes role played by Gerbert and the schools of Lorraine.

Whipple, Allen O. "Role of the Nestorians as the Connecting Link Between Greek and Arabic Medicine," Annals of Medical History, New Series, VIII (1936), pp. 313-323.
Written by New York physician at Columbia University, and read before the New York Academy of Medicine's Section of Historical and Cultural Medicine, January, 1936.

Worrell, W. H. "Qusta ibn Luqa on the Use of the Celestial Globe," Isis, XXXV (1944), pp. 285-293.
Comments on nature of ms. at the University of Michigan Library in Arabic, which Worrell believes is Qusta ibn Luqa's. Has translation of text (Arabic).

C. REFERENCES FROM ENCYCLOPEDIAS AND DICTIONARIES

*"Arabiyya," The Encyclopaedia of Islām (new ed.) Leiden: E. J. Brill, 1960, I, pp. 561-603.
Comprehensive history and analyses of Arabic language and literature in English to date.

*Bowman, Raymond A. "Syriac and Language and Literature," Encyclopedia Americana. New York: Americana Corporation, 1962, XXVI, pp. 193-197.
Contains a good outline of its subject, not specific.

*The Encyclopaedia of Islām: A Dictionary of the Geography, Ethnography, and Biography of the Muhammadan Peoples. Edited by M. T. Houtsma et.al. 4 vols. Leiden: E. J. Brill, 1913-1936.
Best encyclopedia in English to date on Islam and its civilization, except where revised by newer edition, in continuation at present.

*Gordillo, Maurizio. "Giovanni Damasceno, Santo," Enciclopedia cattolica. Città del Vaticano: Ente per l'Enciclopedia Cattolica e per il Libro Cattolico, 1951, VI, columns 547-552.
Discusses life and works of John of Damascus.

*Kattenbusch, F. "John of Damascus," The New Schaff-Herzog Encyclopedia of Religious Knowledge. Ed. S. M. Jackson. New York: Funk & Wagnalls, 1910, VI, pp. 208-211.
Discusses life and works of John of Damascus.

*Leslau, Wolf. "Semitic Languages," Encyclopaedia Britannica (1963), XX, pp. 314+.
Article is comprehensive and updates the essay in the 11th edition by Theodor Nöldeke, whose coverage on Semitic Languages is good.

Lupton, Joseph H. "Joannes Damascenus," A Dictionary of Christian Biography, Literature, Sects, and Doctrines... Eds. William Smith & H. Wace. London: J. Murray, 1882,

III, pp. 409-423.
Scholarly discussion of life and works of John of Damascus.

*M'Lean, Norman. "Syriac Literature," Encyclopaedia Britannica (11th ed.), XXII, pp. 310-317.
Good, comprehensive coverage of writers of Syriac literature. General reference to translators.

Margoliouth, D. S., and A. Mingana. "Qur'an," Encyclopaedia of Religion and Ethics. Ed. James Hastings. New York: C. Scribners, 1916, X, pp. 538-550.
Discusses history of the Koran in the Islamic world.

*Martin, William James. "Aramaic and Syriac Languages," Chamber's Encyclopaedia (new ed.), I, p. 517.
Good comparative article on two Semitic languages with a bibliography on recent, twentieth century references.

*Nöldeke, Theodor. "Semitic Languages," Encyclopaedia Britannica (11th ed.), XXIV, pp. 618-629.
Authoritative and scholarly survey of topic to date of issuance. Has good references, and thoroughly presents knowledge on Semitic languages to first decade of twentieth century.

*Ortiz de Urbina, I. "Giovanni Damasceno," Enciclopedia filosofica. Venezia: Istituto per la Collaborazione Culture, 1957, II, columns 757-758.
Discusses life and works of John of Damascus.

Ronart, Stephan, and Nandy Ronart. Concise Encyclopedia of Arabic Civilization: The Arab East. Amsterdam: Djambatan, 1959-
Gives general references to Syriac translators, the Nestorians, and the Bayt al-Hikmat. Satisfactory tool for brief, not specific knowledge, on people, places, and things in Islamic civilization.

Webster's New Collegiate Dictionary, Based on Webster's New International Dictionary, Second Edition. Springfield, Massachusetts: G. & C. Merriam Co., Publishers, 1951.
Gives general definitions of some terms dealing with the orient, the classical world, and Islam.

*Weir, T. H. "Muhammadanism (in Syria, Egypt, and Mesopotamia)," Encyclopaedia of Religion and Ethnics.

Ed. James Hastings. New York: C. Scribners, 1916, VIII, pp. 898-905.
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ANNOTATED LIST OF SELECTED REFERENCES

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Comprehensive bibliography of Syriac books. May be first catalog of Syriac printed literature classed in a systematic manner. Supersedes Baumstark's Geschichte der Syrischen Literatur.

*Rosenthal, Franz. "Isḥāq B. Ḥunayn's Ta'riḫ al-Aṭibbā'," Oriens, VII (1954), pp. 55-80,
Contains commentary in English with partial Arabic text and its English translation.

*_____. "Some Pythagorean Documents Transmitted in Arabic," Orientalia, New series, X (1941), pp. 104-115, 383-395.
Commentary on Miskawayh's text on the translation of the Golden Verses taken most probably from Hunayn ibn Ishaq's Florilegium and another article on Plato's Exhortations concerning the education of young men.

Ruska, Julius. "Cassianus Bassus Scholasticus und die arabischen Versionen der Griechischen Landwirtschaft," Der Islam, V (1914), pp. 174-179.
Ruska's discovery that the Arabic version of Griechischen Landwirtschaft was translated by Cassianus, not Qusta ibn Luqa, as other scholars had believed previously.

Stern, Samuel M. "The Arabic Translations of the Pseudo-Aristotelian treatise De Mundo," Le Museon, LXXVII (1964), pp. 187-204.
Result of study on an Istanbul ms. previously described as the "Letter of the Golden House" from Aristotle to Alexander the Great which Stern claims is the famous pseudo-Aristotelian De Mundo. Portions of Arabic text included.

*Voorhoeve, P. (comp.). Handlist of Arabic Manuscripts in the Library of the University of Leiden and Other Collections in the Netherlands. Bibliotheca Universitatis Leidensis, Codices manuscripti, No. VII. Lugduni Batavorum: Bibliotheca Universitatis, 1957.
Result of work of Dr. C. Van Arendonk, Director of Leiden University Library's Oriental Library Dept., upon whose death his written notes on the collection were given to his successor, Dr. Voorhoeve. As extensive a survey as possible of the Arabic mss. in the Netherlands.

APPENDIX I

APPENDIX I

MODERN SCHOLARS' RESEARCH

The topic of the appendix deals with research in discovering texts and other source materials in modern times, generally constructing a history of the translators of Syriac and Arabic versions from Greek texts.

So far no general history exists in book form, except for the work of Moritz Steinschneider.[1]

International organizations, i.e., Académie Internationale d'Histoire des Sciences, International Congress of Orientalists, and Congrès de Philosophie Médiévale, have taken steps to form bodies to coordinate research dealing with the Arab translators of the ninth-eleventh centuries in the Abbasid domain.[2] What results or conclusions have arisen from these groups were not known to the writer, who doubts if any concrete publication has been published by them. Index Islamicus, edited by the librarian of London

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[1] Moritz Steinschneider, Die arabischen Übersetzungen aus dem Griechischen (Graz, Austria: Akademie Druck u. Verlagsanstalt, 1960 [reprint]), entire monograph.

[2] G. C. Anawati, "Philosophie médiévale en terre d'Islam," Institut Dominicain d'Études Orientales du Caire, Mélanges, V (1958), pp. 175-236; M. Plessner, "The Cataloging of Arabic Manuscripts on Medicine and the Sciences," Archives internationales d'histoire des sciences, IX, no. 34 (1956), pp. 345-346.

University's School of Oriental and African Studies, was the first headway made in this field, because it classified all periodicals in western languages, besides certain other serials and collective publications under the headings of "Transmission of Greek and Latin Science to the Arabs" and "Transmission of Greek Science to the Arabs," besides listing thorough bibliographies of the major translators.[3]

The organization of modern scholars' research on this topic was organized into the following categories: Pre-twentieth century; Early twentieth century; and Contemporary and current research.

In limiting the scope of Appendix I, the writer omitted much repetition of previously mentioned works. Only the major projects were discussed. For a more thorough bibliography on the scholars who have worked with newly discovered Syriac and Arabic mss., please consult the "Annotated List of References Consulted." Most of the authors of periodical articles dealing with translations entered in the bibliography were modern researchers in the field of analyzing Greek and/or Syriac texts into Syriac and/or Arabic.

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[3] J. D. Pearson, Index Islamicus: 1906-1955 (Cambridge, England: W. Heffer & Sons Ltd., 1958), pp. 170-173; _____, _____, Supplement: 1956-1960 (Cambridge, England: W. Heffer & Sons Ltd., 1962), p. 56.

I. PRE-TWENTIETH CENTURY

The first western research in the field of studying works of Syriac translators occurred in the eighteenth century by Giuseppe S. Assemani in Rome. Two of the three volumes of his Bibliotheca orientalis Clementino-Vaticana, published in Rome from 1719-1728, dealt with Monophysite and Nestorian authors.[4]

Over a century passed before more research was done. E. Bekkers in 1831 analyzed the source of the Aristotelian Poetics from a Parisian codex. Whether it was in Syriac or Arabic was not stated.[5]

The precedent of an European scholar searching for an original translation from Greek and Syriac into Arabic was made by Zenker, in an edition of an Arabic translation of Aristotle, published in 1846.[6]

Al-Nadim's al-Fihrist was edited by G. Flügel, J. Rödiger, and A. Müller between 1871-1872. This work exposed the west for the first time to the most famous and earliest Arab bibliography, an index of Arabic books.[7]

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[4]Afnan, op. cit., p. 1.

[5]Wilhelm Kutsch, "Zur Geschichte der syrisch-arabischen Übersetzungliteratur," Orientalia, N.S., VI (1937), p. 68.

[6]Afnan, loc. cit.

[7]Wright, op. cit., p. 214.

The second major secondary source came out from 1884-1886 in three volumes and was Ibn Abi Usaibi'a Kitab ...al-Atibba or the History of the /Arab/ Doctors, edited by A. Müller.[8]

Lucien Leclerc in 1876 published his great classic on the history of Arab medicine in French. The detailed two volume set in which he included the translators, Syriac and Arabic, was the most voluminous to date.

In 1903 Julius Lippert edited the History of Knowledge or Ta'rikh al-Hukama of al-Qifti, which was considered one of the three main secondary sources for establishing the biographies of the translators.[9]

After the publication of the third major secondary source, modern European historians specializing in the Arab Middle Ages, relied heavily upon the three in dealing with Arab and Syriac philosophy, science, and medicine.[10]

After the availability of the three major secondary sources besides Ibn Khallikan's Biographical Dictionary, which came out between 1842-1871, scholars wanting to publish in the field of Syriac/Arabic translations from Greek

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[8]Meyerhof, "Les Versions syriaques et arabes des écrits galéniques," op. cit., p. 33; Cohen, op. cit., p. 34.

[9]Ibid.; Meyerhof, "Les Versions syriaques et arabes des écrits galéniques," loc. cit.

[10]Ibid.

could resort to these four works written in the later Middle Ages, with a fair degree of reliability.

Hence the volume of publications in the field increased beginning in the 1890's and continued to increase, reaching a height in the 1920's.

The next two scholars who published around the year 1887 were David S. Margoliouth, the writer of a critical text of an Arabic translation made by Abu Bishr Matta Yunus al-Qunna' of Aristotle's Poetics, and Hoffman, who published a Syriac version of Aristotle's De Interpretatione.[11]

From 1889-1896, Moritz Steinschneider came out with the classic work in four issues of different periodicals in German of Die Arabische Übersetzungen aus dem Griechischen, which dealt with the entire corpus of translated works from Greek to Arabic.[12] His publication became the major source for studying the translations. In 1960 the four issues were combined in a reprint edition.

The Swiss doctor Heinrich Suter published his short monograph on the Arabs as transmitters of knowledge from the orient to the occident in 1897 in German.

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[11] Ibid.; Kutsch, op. cit., pp. 68-69.

[12] Moritz Steinschneider, Die arabischen Übersetzungen aus dem Griechischen, loc. cit.; Festschrift zum achtzigsten Geburtstag /zu/ Moritz Steinschneider (Leipzig: Otto Harrassowitz, 1896).

II. EARLY TWENTIETH CENTURY

The turn of the century saw Dr. Suter's work on the Arab mathematicians and astronomers, including Syriac-speaking and Arabic translators who qualified in the two above professional categories.

The same year as Lippert's edition was published, the first glossary of Arabic terminology in philosophy came out in a periodical. The article was based upon Arabic translations of Greek classics, and was written by one of the leading Spanish Arabists, Asin Palacios.[13]

Three years later Max Simon published an Arabic edition of Galen's On Anatomy, which contained a Greek/German glossary. Simon, however, was criticized for his a priori method of choosing a German equivalent. In 1909 he came out with an essay on the translated Arabic corpus of Galen.[14]

The noted Italian Arabist, Giuseppe Gabrieli, published the first western work on Qusta ibn Luqa, which was complete to date, 1912.

In the second decade of the twentieth century, Europeans continued the academic challenge of working on

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[13] Afnan, op. cit., p. 2.

[14] Ibid.; Max Simon, "Zum arabischen Galen," Zeitschrift der Deutschen Morganländisches Gesellschaft, 63 (1909), pp. 453-456.

Greek into Syriac and Arabic, with some scholars listing incomplete glossaries of terminologies used in their studies. Among the works were the following: Pollak, Die Hermeneutik in der arabische Übersetzung, Leipzig, 1913; Gonzales Palencia, Kitab Taqwim al-Dhihn, Madrid, 1915; Massignon's Essai sur les origines du lexique technique de la mystique musulmane, Paris, 1914-1922; and a couple of other works which dealt with Arab philosophers. In 1913 Gotthelf Bergsträsser came out with Hunayn ibn Ishaq und seine Schule, published in Leiden, the initial specialization of Hunayn and his colleagues who worked in Baghdad.[15]

The 1920's witnessed the initial, major period of activity in the western development of research in the translations of Greek texts into Syriac and Arabic.

Professor Anton Baumstark of the University of Bonn publised in 1922 the Geschichte der syrischen Literatur... which coordinated all the work of the Syriac translators to date of publication.

Over the next ten years, a dozen or so scholarly items were published in Europe on the translators and their work. Among the entries were: G. Gabrieli's biography of Hunayn ibn Ishaq; Dr. Bergsträsser's two masterpieces on Hunayn's Risalat of the Galen bibliography and its revision.

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[15]Afnan, loc. cit.

These latter two works remain the only primary source material available to the writer of this thesis. At least works of Dr. Meyerhof, the noted Arabist and Cairene oculist, were published in scientific and classics periodicals, as well as one separate monograph. These five writings continued where those of G. Gabrieli and G. Bergsträsser left off. The first article issued was "New Light on Hunain ibn Ishaq," still today a thorough commentary on the life, medical and original works of Hunayn, besides including a section on the patrons. Two other of Dr. Meyerhof's articles were published in 1926 in Byzantion: One on Syriac and Arabic versions of Galen's writings; and the other on an Arabic version of a lost treatise of Galen's.[16] The fourth work was his The Book of the Ten Treatises on the Eye Ascribed to Hunain ibn Is-haq (809-877 A.D.), which gave the most complete biographical information about Hunayn, even today. Jaroslaus Tkatsch published Die arabische Übersetzung der Poetik des Aristoteles und die Grundlage der Kritik des griechischen Textes (I, Wien & Leipzig, 1928).[17] In 1930 Dr. Meyerhof issued an article, not on Hunayn, but on Thabit ibn Qurra's Book of Treasure, the ms. of which he

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[16] Max Meyerhof, "La Version arabe d'un traité perdu de Galien," Byzantion, III (1926), pp. 413-442.

[17] Afnan, op. cit., p. 3; Kutsch, loc. cit.

found in Cairo.

About the same time, Francesco Gabrieli came out with one of his early works which dealt with the Poetics of Aristotle in an Arabic version.

Other works at that time were R. P. Paul Sbath's newly found Arabic ms. on "L'Ouvrage géoponique d'Anatolius de Bérytos (IV^e siècle)" and G. Bergsträsser's second major contribution on Hunayn's Galen-bibliography, consisting of newly uncovered evidence at the Aya Sophia Mosque.

In 1933 and 1934 the Rev. Sbath issued two articles in the Bulletin de l'Institut d'Égypte on two original works of Nestorian physicians: Hunayn's Book on the Questions of the Eye and Ibn Masawayh's Book of Time.

The following year, Lutfi Sa'di wrote "A Bio-Bibliographical Study of Hunayn ibn Is-haq al-Ibadi (Johannitius) (809-877 A.D.)" which supplemented Meyerhof's "New Light on Ḥunain ibn Isḥâq," even including a very brief English translation of the Risalat.

The next writings in a western language were done by Paul Sbath of Cairo on two original works of Ibn Masawayh and Qusta ibn Luqa.[18]

During the war years publication in the field drew to

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[18] R. P. Paul Sbath, "Le Livre sur l'Eau d'Orge de Youhanna ben Massawaih grand savant et célèbre médecin chrétien mort en 857," op. cit., pp. 13-24.

a halt, to be resumed again in the mid-1940's. Brockelmann's second supplement of Geschichte der arabischen Litteratur began in 1943, continuing until 1949. Within this bio-bibliographical history of Arabic literature were thorough entries of the translators and their translations supplementing his two volume work of 1898-1902 and his first supplement of 1937 to 1942.

In the late war years, work was partially completed on Plato Arabus, edited by Richard Walzer and Paul Kraus. The latter died in 1944, slowing down completion of the three volume work. By 1953 three volumes of Plato Arabus had been published by three Arabists: Galen's compendium of the Platonic Timaeus; al-Farabi's Platonic philosophy, and al-Farabi's compendium of Plato's Laws. Two of the volumes possessed Greek/Arabic, Arabic/Greek indices, including an a priori list of possible Greek equivalents.[19] Walzer published also during this period Galen on Medical Experience, compiled from a new Arabic edition with Dr. Walzer's English translation. Walzer had been encouraged in the early 1930's to work on the Galenic treatise by G. Bergsträsser, his teacher at Munich. Other Arabists, George Levi Della Vida, Dr. J. Schacht, and Professor H.A.R. Gibb, all aided Walzer on either the Arabic or English versions.[20]

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[19]Afnan, op. cit., pp. 3-4.

[20]Walzer, Galen on Medical Experience, op. cit., p. xi.

Dr. William Hatch, a professor of Syriac language and literature at the Episcopal Theological Seminary in Cambridge, Massachusetts, became the first scholar in America to make headway in this field. His Album of Dated Syriac Manuscripts was unequaled when published in 1946, and still remains so today.

Francesco Gabrieli prepared a short article of al-Farabi's Platonic Laws in 1949.

III. CONTEMPORARY AND CURRENT RESEARCH

The writer of the thesis uses the term "contemporary" research to signify research done after 1950. Current research to signify research done after 1950. Current research refers to work since 1960 completed and uncompleted to date by scholars in the field of investigating Greek texts into Syriac and Arabic by ninth-tenth century translators.

George Levi Della Vida wrote an article on two Arabic fragments of a translation of Galen in 1950.[21]

In 1952 Father Cyril Haddad presented his thesis at the Sorbonne on the three different translations of the Sophistics. The thesis contained a glossary which until

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[21] Giorgio Levi Della Vida, "Two Fragments of Galen in Arabic Translation," Journal of the American Oriental Society, 70 (1950), pp. 182-187.

that date was the most comprehensive extant compilation of its type.[22] Exactly which languages were in the glossary, the writer was not able to determine. Most probably they were Greek/Arabic or Arabic/Greek.

Three years later, Dr. Arthur J. Arberry discovered an unique ms. in the library collection of Sir Chester Beatty in England. The content of the ms. was an Arabic epitome of Plato's Republic, which Professor Arberry believed to be written in the tenth century. Who exactly wrote the epitome was uncertain.[23]

In the same year, 1955, Dr. Malcolm C. Lyons of Pembroke College, Cambridge University, prepared a translation of Themistius' commentary on the Aristotelian De Anima. Dr. Lyon's work was the result of his doctoral dissertation at Cambridge. One ms. copy was contained at the Qarawiyin Library at Fez, Morocco of the commentary.[24]

Dr. Samuel Stern of Oxford produced an article on an interpretation of an Aristotelian work dealing with Physics and Rhetoric Ishaq ibn Hunayn in 1956.[25] Also in the same

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[22]Afnan, op. cit., p. 3.

[23]Arthur J. Arberry, "Some Plato in an Arabic Epitome," Islamic Quarterly, II (1955), pp. 86-99.

[24]Afnan, op. cit., p. 4.

[25]Samuel Stern, "Ibn al-Samḥ," op. cit., pp. 31-44.

year, the earliest uncovered commentary of Aristotle's De Anima in Arabic came out written by Muhammad Saghir Hasan. The work was based upon a ms. in the Escurial Library in Madrid. The commentary was made by Ishaq ibn Hunayn.[26]

In 1958 two works came out from the west and Middle East. The first was a critique of Aristotelian theology, written by P. Thillet. The article mentioned two Arabic editions on theology, one by Paul Kraus based upon two found mss., and the second by 'Abd al-Rahman Badawi, the noted Egyptian scholar of Arab cultural history. The latter's work was based upon six mss.[27] Earlier, Abd al-Rahman Badawi had put out a similar work of Plato Arabus, entitled Aristoteles Arabus in 1953, which was an erudite work. Badawi also came out with the complete Arab version of the Organon done by many translators of the ninth and tenth centuries. The second work coming out in 1958 was written by Father Wilhelm Kutsch, who had been inspired to tackle the task of wording in an Arabic version of the late Father Paul Kraus, of Nikomachus of Gerasa (a follower of Pythagoras) on the Arithmetica introductio, translated from Greek to

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[26] Muḥammad Ṣaghir Ḥasan, op. cit., pp. 57-72.

[27] Wilhelm Kutsch, Tābit B. Qurra's arabische Übersetzung /of the Arithmetica introductio/ des Nikomachus von Gerasa zum ersten Mal herausgegeben (L'Institut de Lettres Orientales de Beyrouth. Recherches. t. IX. Beirut: Imprimerie Catholique, 1958), p. vii.

Arabic by Thabit ibn Qurra. Father Kutsch produced his work in Beirut from a microfilm copy of the British Museum's ms. The work included the Arabic text and Greek/Arabic, Arabic/Greek glossaries.[28]

F. Gabrieli wrote an article in Al-Andalus on recent studies on translations from Greek in Muslim civilization, covering late nineteenth century works up to the late 1950's. He emphasized monographs and periodical articles from 1930 to date of publication.

A work of a similar nature, only specifically dealing with philosophy, was Roger Paret's lengthy bibliographical notes on the first Arabic versions from Greek texts. Paret's work was an excellent concentration on ninth and tenth century translations published in the late nineteenth and twentieth centuries to date of issuance. His article in Byzantion was to be continued, either on philosophy or other subjects of which the Baghdadi translators prepared Arabic versions.

In 1962 Professor Richard Walzer published his now famous Greek into Arabic, a collection of some of his best essays on the transmission of Greek philosophy to the

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[28] P. Thillet, "Notes critiques sur la théologie d'Aristote," Arabica, V (1955), pp. 56-66; F. Gabrieli, "Estudios recientes sobre la traductión griega en la civilizatión musulmana," op. cit., pp. 306-307.

Muslims.[29] The work's two major purposes were to trace Greek philosophical texts into Arabic versions which had been lost; and the other, to investigate the importance Greek thought had in the development of Islamic philosophy. Most of Walzer's fourteen articles in Greek into Arabic dealt with newly recovered versions of Aristotle and Galen.[30]

Malcolm Lyons in 1963 published Galen's official medical commentary on Hippocrates, containing Arabic/Greek, Greek/Arabic glossaries.

The two volume set of Dominique Sourdel, on the history of the Abbasid Wazirate, was of special interest, as it listed wazirs under caliphs by year of office. The same year as Sourdel and Paret's masterpieces were published, Francis Carmody of University of California, published The Astronomical Works of Thabit ibn Qurra, which dealt more with Thabit's original works than with translations, but it did furnish biographical materials. Also in 1960, T. Fahd wrote an article on an Arabic translation of the Oneirocritics of Artemidorus of Ephesus, based upon a ms. discovered in the University of Istanbul Library.

Several works were published or issued in the year

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[29] Giorgio Levi Della Vida, Two Fragments of Galen in Arabic Translation," Journal of the American Oriental Society, 70 (1950), p. 182.

[30] Walzer, Greek into Arabic, op. cit., book jacket.

1964. Nicholas Rescher, professor of philosophy at the University of Pittsburgh, wrote The Development of Arabic Logic, a historical survey of logical studies in the Muslim world. Soheil Afnan published the book on origins of Arabic and Persian philosophical terminology. Dr. Rescher's first two chapters on ninth and tenth century developments in Arabic logic were of great importance to this thesis because of his inclusion of Baghdadi translators in his tables of Arabic logicians, besides relating their importance to the course of developments in the first two centuries of Arabic logic.[31] The Afnan work was an initial effort of high calibre in analyzing roots of Arabic and Persian terms in philosophy. Afnan, a Turkish scholar, gave a brief bibliographical history of western scholars who had written treatises relating to his topic.

Samuel Stern, of All Souls College, Oxford, also in 1964, published portions of "The Arabic Translations of the Pseudo-Aristotelian Treatise De Mundo" based upon two translations. A third translation of the De Mundo was to be published in an article, in press, to appear in the next number of Le Museon, which will be most probably in the first 1966 issue.[32]

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[31] Rescher, op. cit., p. 30.

[32] Personal correspondence of the author, letter from Samuel M. Stern, November 1, 1965.

Other current research published in 1965, in press, or still in process, included the following items: Franz Rosenthal's Das Fortleben der Antike im Islam, which appeared to be one of the most comprehensive works of its kind, including not only an entire chapter on the technique of translation method and textual criticism, but chapters devoted entirely to the Greek knowledge that was transmitted;[33] H. J. Drossaarts-Lulofs' Nicolaus Damascenus on the Philosophy of Aristotle, published in Leiden, 1965; and Hans L. Gottschalk's Die Rezeption der antiken Wissenschaften durch den Islam published in Anzeiger, Austria in 1965 were two books the author was unable to consult due to delay in publication. Drossaarts-Lulofs work contained fragments of the first five books translated from the Syriac with a commentary.[34]

Work is underway now at Cambridge University on an initial effort to produce translation texts containing full glossaries, leading towards a tangible realization of an Arabic/Greek dictionary, very badly needed in the study of

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[33] Franz Rosenthal, Das Fortleben der Antike im Islam (Die Bibliothek des Morgenlandes. Zurich: Artemis Verlag, 1965), pp. 400-407; Personal correspondence of the author, letter from Franz Rosenthal, October 29, 1965.

[34] Ibid.

classics, Arab studies, as well as many other fields.[35]

Dr. Lyons made reference to a work, possibly underway at Columbia University, on an edition of Aristotle's Ethics by Professor D. M. Dunlop.[36] However, in the author's correspondence with the latter, no mention was made of the work.[37]

That concludes the current research just published or in process in the western world, known to the writer.

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[35] Personal correspondence of the author, letter from Malcolm C. Lyons, October 30, 1965.

[36] Ibid.

[37] Personal correspondence of the author, letter from D. M. Dunlop, October 29, 1965.